

MONSOON ASSEMBLAGES

YANGON FIELD TRIP REPORT September 2019

Beth Cullen + Lindsay Bremner



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**UNIVERSITY OF
WESTMINSTER**

**MONSOON
ASSEMBLAGES**



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Itinerary

Week 1	Monday 9 th Sept	Tuesday 10 th Sept	Wednesday 11 th Sept	Thursday 12 th Sept	Friday 13 th Sept	Saturday 14 th Sept	Sunday 15 th Sept
Notes	Arrive in Yangon	AM: Meeting with Architect 2	AM: Meeting with plastic waste activist PM: Meeting with art curator	AM: Meeting with planning consultant PM: Meeting with architect 2	AM: Meeting with geologist PM: Meeting with photographic gallery curator	LB to Naypyidaw AM Interview Meteorologist 5 PM Visit the Gem Museum	AM: Visit Tourist Burma Building opening PM: Yangon Zoo / Lakes
Week 2	Monday 16 th Sept	Tuesday 17 th Sept	Wednesday 18 th Sept	Thursday 19 th Sept	Friday 20 th Sept	Saturday 21 st Sept	Sunday 22 nd Sept
Notes	AM: Project planning session PM: meetings with heritage consultants and tour guide	AM: meeting with plastic recycling expert, visit Dala Dumpsite PM: Yangon markets	All day guided trip to NYCD development site and Twante	AM: BC meeting with independent researcher re. Burmese calendar LB Meetings with city planner and heritage guide PM: Back alleys / pipeline	All day guided trip to Letkokkon	Bus to Bagan	AM: Visit Bagan Museum PM: Walk along river and brick stupas
Week 3	Monday 23 rd Sept	Tuesday 24 th Sept	Wednesday 25 th Sept	Thursday 26 th Sept	Friday 27 th Sept	Saturday 28 th Sept	Sunday 29 th Sept
Notes	All day guided walk up Mount Popa	All day trip to Minbu mud volcanoes	Bus to Mandalay	AM: Visit to Mahar Aung Myay Jade Market	All day tour around Mandalay, inc. Sagain Hill, Kyauksen Pagoda silkweaving	Travel to airport – Leave Myanmar	

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FIELDNOTES

Summary

During September 2019, Lindsay Bremner and Beth Cullen spent three weeks in Myanmar conducting field work. They spent time in Yangon, Bagan and Mandalay where they interviewed officials from planning and meteorology departments and met with a number of NGO's and professional groups. They visited the New Yangon City Development site, a proposed development to extend the city to the west and journeyed south to Letkokkon on the Gulf of Martaban to visit a mangrove resuscitation project. Within the city, Beth conducted research into the back alleys and plastic and Lindsay was interested in the plant life on ruined colonial buildings. While in Yangon, high end shopping malls and upmarket condominiums, and their relationship to the jade economy began to assume importance for the project.

WEEK 1

Monday 9th September

- Arrived in Yangon two hours later than expected as flight from Dubai was delayed. Arrived in the dark to light rain showers and wet streets. Temperature 25 degrees, much cooler than previous visit in November 2018.
- Booked into hotel on 38th Street. Rooms felt damp and were filled with mosquitoes flying around lazily. Went to cafe around the corner for something to eat and then back to hotel.

Tuesday 10th September

- Woke to light rain showers. BC interested in researching back alley drainage spaces that lie behind the gridded downtown streets and spent early morning observing alley situated behind the hotel. Alley littered with polystyrene food cartons, plastic bags and piles of plastic water bottles.
- LB and BC left hotel around 9.30 to visited an art gallery housed in colonial building on corner of Merchant St and Pansodan St. Interested in the gallery as potential place for MONASS exhibition/workshop. Huge wooden staircase, led to light, airy rooms, floors covered in tiles which were reportedly imported from Manchester. Some artwork on display was monsoonal, one painting titled 'rainy season'. LB looked for plant species on the window ledges, took samples to press, photographed plants in situ and took GPS readings. Wandered through building and observed tea stalls in the corridors. Some rooms being used as offices, some as guest houses. Vestiges of the colonial past visible in the ornate manhole covers (British style) and old horse shoe nailed to the floor lintel. Also observed green nets covering alleys below to catch trash that was being thrown out of windows on higher floors and neighbouring building.
- Walked from downtown area towards Yaw Min Gyi Ward where we had arranged a meeting. Passed key buildings such as the Post Office, Town Hall, Sule Pagoda, new malls and Sri Kaali Amman Tamil temple. Conscious of historical and global connections associated with the buildings (e.g. Tamil migrants from India and colonial officials from Britain). Arrived at Bogyoke Aung San Market where we spent time observing the stalls.

- Walked to the back of the market across the train tracks and into neighbourhood around Bo Yar Nyunt Rd. Different style of architecture than other parts of downtown – possibly constructed in the 1930s as part of the first wave of urban expansion beyond the colonial area. Neighbourhood full of upmarket cafes and restaurants. Came across art gallery hosting an exhibition titled ‘Monsoon melodies’.
- Met architect 2 and spoke about the GyoByu pipeline project, and recent school playground initiative using bamboo structures. He showed us model of the school, drawings and plans of the site. Mentioned key moves in the design work – creating a hillock from earth, play infrastructure for kids, oriented around a tree, lighting on the bamboo structure to illuminate the pipeline at night. Showed us data driven mapping work. He also mentioned a colonial building that he is interested in working with called Kyaikkasan racecourse. Offered to take us on a walk along the GyoByu pipeline later in the week, and to the racecourse. Spoke about workshops he has been facilitating and how we might collaborate.
- Left the office around 1.30pm and it started to rain. Rained very heavily for the rest of the afternoon and into the evening. Had lunch in Easy Gentlemen Coffee Roasters and watched the rain and took photos and video footage. Walked back across the railway track and passed through vegetable market on bridge over railway during torrential downpour. Recorded footage of rain interacting with an assortment of surfaces from telephone cables, to plastic awnings, concrete pavements and the leaves of plants (e.g. elephant ears). On the very wet walk back to the hotel

became aware of how much plastic there is everywhere - sheets of plastic being used to cover stalls, shops, roadside vendors.

- Got back to the hotel and recorded footage of rain in the back alley behind the hotel. Went for dinner to same cafe on the corner. Lull in the rain between 7 and 9 and then started raining hard again when we returned to hotel.

Wednesday 11th September

- Woke up to torrential downpours and weird splashing sounds in the alley behind the hotel - sounded like people throwing buckets of water but not sure.
- BC had arranged meeting with a plastic waste activist who had set up an organisation working to reduce plastic waste in Myanmar. Their offices were situated on the Tha Pyae Road, next to huge building under construction. Had very informative conversation about the issue of plastic waste in Myanmar. The plastic waste activist described changes in plastic waste from 2011 onwards as the country entered the global economy. Also spoke about his work to survey plastic waste in the country’s rivers – led a survey on plastic pollution in the Ayeyardwady River commissioned by Flora & Fauna International. Also spoke about initiatives to encourage behaviour change on plastic consumption. Mentioned his role in establishing an organisation located in Dala Township that is working to make products from recycled plastics.
- Travelled from his office to have lunch at Pansuriya (downtown) after which we met with the art curator we had met on our last visit LB showed her the MONASS drawings

from the Milan Triennale. Spoke about the proposed MONASS workshops in each city and also spoke about urban development dynamics more generally.

- After meeting with her, we visited a photography gallery, located on Bogalay Zay Street (BC + CG had visited during previous trip in November 2018 and established contact with its founder). When we visited the gallery was displaying an exhibition of photographs including photos of informal jade mining sector – captions mentioned how they are affected by monsoons. LB purchased a photograph for MONASS exhibition.

Thursday 12 September

- Woke to an overcast, cloudy day, rainfall seemed likely. LB arranged for us to meet with a planning consultant in the morning. On the way to the meeting observed cleaning of storm water drains - piles of plastic bottles along drainage channels. Lots of plastic and polystyrene takeaway containers in the channels, even though people eating from stalls on the street seem to use china plates rather than takeaway containers.
- Met with the planning consultant at her Yangon office. She delivered a PPT presentation in response to a series of questions that LB had sent in advance. Spoke about a new development to the west of Yangon that she was working on. Spoke about site development plans, funding sources, resettlement scheme and reaction of villagers. Presentation of the development project in answer to the questions I had sent. Recorded. Impressions of creeks, platforms levelled for development, resettlement areas. Chinese investment of

1,5 billion US dollars for development in return for 13 hectares of industrial land. Total site area is 90 hectares. Resettlement areas 20 hectares, This only leaves 57. Went through interesting legal issues – the project falling in a legal gap, not sure what to call it, under which legislation if falls, how to make it legal. Spoke of all the agencies involved – China, Japan, Korea the main players, Dfid and the Dutch from Europe. The planning consultant stressed that people are keen to urbanise – mentioned challenges of transport and employment in Yangon at the moment. Also mentioned the hydrology/topography of the site and flood management strategies, apparently the area has been severely affected by salinity intrusion following Cyclone Nargis. (Following the meeting she shared an interesting article with LB about saltwater intrusion, ‘The Salty Taste of Climate Change in Myanmar’).

- After the meeting went to Myanmar Plaza Mall for a coffee. Huge contrast in prices compared to café’s in the downtown area. Conspicuous displays of wealth. Started discussing the possible connections between levels of wealth demonstrated by Yangon’s mall culture and extractive industries in the country. Neither of us were sure whether there is a connection or not and decided that it needed more exploration. Mall was an interesting example of the neoliberal development model and associated aesthetics and aspirations.
- Walked from the mall along Yan Shin Street. Started to take photograph and video footage of stormwater drainage system along the street. Observed plastic waste caught in drainage structures, informal recycling activities in a

number of places, also lots of life in stormwater drains – particularly fish.

- Arranged to meet architect 2 at a Chinese restaurant on Yan Shin Street. Over lunch we chatted about various things including a project he is working on with two American anthropologists who are working around Indawgyi Lake in northern Myanmar. Lake has unique ecology. People living around the lake are rice farmers (highly seasonal), when they are not farming they migrate for work in nearby Hpakant. Conditions in the jade mine are horrendous, many turn to heroin as a coping mechanism, but then return to their home villages around the lake (and elsewhere) and continue their drug use. Apparently 50% of the young people (males) in the village are heroin users. He is helping to design the guesthouse they want to construct as part of a community tourism initiative to develop alternative livelihoods. When I asked about flows of wealth from EI's within the country (and whether these are linked to urban development) he said that most of the wealth goes to China. Also spoke about drainage and flooding.
- After we finished lunch we walked to the GyoByu pipeline, as we walked it started to rain. Accessed the pipeline from a bridge over the road. (further along from where CG and BC had accessed it during November 2018 trip). Lots of activities apparent along the pipeline. Workers digging new water pipeline infrastructure. Architect 2 commented that the soil was clay - apparently clay underlies all of Yangon. He has had to get soil samples tested during his work. Agriculture happening along the pipeline (watercress and onions), which is sold in local markets. Visited the school

site that he had mentioned when we met earlier in the week. Light intended to illuminate the pipeline wasn't working.

- Apparently, pipeline extends 50km beyond the city into rural areas - has been documented by photographer working with Architect 2I. Spoke about history of the pipeline, which was apparently built by two British men in 1940, but materials were shipped from America. According to a newspaper article the water supplied by the pipeline is not safe due to bacteria and accretions from the pipe. Pipeline is extremely high pressure - force of water is immense (but also a lot of leaks which people depend upon!) Spoke about the various communities along the pipeline – although they are informal settlements the inhabitants are constructing playgrounds in the area (using recycled materials) and donating oxygen to nearby children's hospital. Children seem to be a strong theme and catalysts for action.
- Pipeline was wet due to the rain, making it very slippery and it felt quite dangerous to walk along. Decided to cut walk short and went to Inya Lake where we experienced another torrential downpour and from there went on to colonial racecourse building. Spent quite a long time at the racecourse – incredible building, founded in 1887 and once home to the Rangoon Turf Club (famous racing stable and colonial social institution). Racecourse fell into disuse after the war. As the structure is abandoned it is now being occupied informally. Lots of people inhabiting the ground floor level. Also, evidence that it has been used recently as a film set. Lots of plants and ficus trees colonising the

building, taking advantage of the cracks in the walls and areas where moisture can enter. According to architect 2 there are plans to knock down the buildings and turn the site into condominiums by Japanese developers.

- On the way back to downtown in taxi we spoke about whether there were any conversations about de-growth in Yangon (prompted by conversations in Chennai). Architect 2 said absolutely not because everyone is concerned with developing the economy. Spoke about exponential growth being facilitated by ring roads (echoing conversations we had earlier with TM). No prominent environmental movement, but a small punk / anti-establishment movement. Photography and art a form of political expression.
- Went for dinner to Burma Bistro. Discussed the GyoByu pipeline and the monsoonal connections. Yangon relies on water to exist and the water is supplied by the monsoon. (Apparently 60% of Yangon's population is supplied by piped water). Pipeline linked to reservoirs that harvest monsoon water. It is another monsoonal infrastructure. Spoke about parallels with water supply issues in Dhaka.

Friday 13th September

- Breakfast with LB in cafe in Town. Discussed two meetings that had been set up for the day (the first a contact established by LB in 2018, the second a contact that BC and CG had met during previous visit in November 2018), went over content of previous discussions to agree questions / things to discuss.
- First meeting of the day was with a geologist based at the

Hlaing Campus of the University of Yangon. Difficult finding the building so arrived 15 mins late. Spoke about links between geology and weather. Difficult to talk about monsoon because it is outside of his field of expertise. Got a broad understanding of the geology of Myanmar, the faultline and tectonics and how it influences human settlement. Most of his work has been done "on the ground". Seems there are a lot of scientific debates going on about the geology with different 'camps' of scientists promoting different arguments. Interesting conversation about the geology and hydrology of Yangon. Mentioned particular brand of water that is more trusted than others due to its source. This is a recurring theme from the various cities – hierarchies of water seems to extend to bottled water. Water from the reservoirs is also contaminated with iron due to the geology of the area. This may be the 'contamination' that is mentioned in the academic literature which resulted in the reservoirs no longer being used for drinking water. Not sure whether this means that they do not supply water to the city at all, or whether this relates specifically drinking water. Links between geology and urbanisation, and implications for the new developments. Spoke about how he tries to influence without causing tension or conflict. Things have to be done indirectly.

- After interview headed to Pansuriya for lunch we went to the photographic gallery again. Saw photographer and videographer we met when we visited the exhibition the previous day. Apparently, she has been working on a collaborative project with female photographers from Dhaka. Women were put in pairs (Yangon + Dhaka) and

worked on themes including identity, place and belonging. Mentioned the MONASS city workshop and the possibility of them being involved in some way.

- Went to coffee place to talk with the curator of the photographic gallery whom BC had met with during previous visit to Yangon). Started by introducing the main aims and concepts behind the project. LB showed DS18 student work to give him a sense of the kinds of outputs. We spoke about the curator's project and that photos/stories can only capture certain aspects of the dynamics, and the role that architectural and design visualisations could play in filling these gaps. Explained the potential air/water/geological themes for each of the cities and the notion of the 'geologic monsoon' for Yangon. Spoke in depth about the photographic project and documentation of extractive industries, particularly jade mining. Spoke about connections between extractive industries and urban development – confirmed that wealth flows are a significant influence on the development of Yangon. Asked about monsoonal dynamics in relation to seasonality of jade mining and labour flows. Explored the idea of including work from their project in the MONASS final exhibition in London. He was very receptive to the idea and said that he would be happy to collaborate and that it would support their work. Also spoke about developing some of the student work to potentially use on their website. We agreed to continue the conversation via email. The gallery curator recommended that we get in touch with the London based Global Witness project. Said he would be happy to make the introductions and they would be good

people to include in the exhibition / conference. Also recommended that we speak with one of his photographers who took most of the jade mining photos.

- Dinner at Vegetarian Indian restaurant. LB mentioned that our meeting on Monday with city planners had been postponed.

Saturday 14th September

- LB left Yangon very early to fly to Naypyidaw to interview meteorologist 5. No notes taken of interview, which she filmed. Arranged with a taxi driver at the airport in Naypyidaw to be her transport for the day. He drove her around on the vast empty 20 lane highways. After the interview, he took her to the Gem Museum adjoining the Jade Emporium where no photographs allowed. Bumped into meteorologist 1 whom she had met previously.
- BC stayed in Yangon and spent the morning making contact with an anthropologist working at Indawgyi Lake and contacted a tour company to inquire about a Mogok tour. After morning admin tasks, BC took taxi to Myanmar Plaza Mall with the aim of photo surveying the area. Spent time observing the mall. Constant stream of taxis at the front entrance. Brands (and prices) indicate the levels of wealth needed to shop there. Remembered that Raphael mentioned that this area is where many Asian expats live. Lots of major banks in evidence there. Observed goods loading area at the back of the mall and small food stalls along the road for service workers and taxi drivers; interesting assemblage of buildings and institutions around the mall.

- After all, BC went to GyoByu pipeline but became aware that pipeline is surrounded by banks and government buildings with high levels of security. Accessed the pipeline from bridge on No 1. Industrial Road. Small wooden ramp has been constructed to provide access. This section of the pipe has many infrastructural components in evidence – valves, junction points etc. Would be good to walk the whole section, but don't feel comfortable to do it alone.
- Weather seems to be becoming more predictable in the past few days. Rain at night. Last few days have been dry with rain in the afternoon. Clears up in early evening and then rains heavily at night.
- Met LB for dinner and spoke about the details of her day. Plane journey to NayPyiTaw was interesting – could see some of the landscape features that the geologist had mentioned during meeting on Friday. Capital city sounds totally bizarre, desolate, designed to prevent insurgency, low population. LB had good meeting with meteorologist 5, learned some interesting things about meteorological collaborations between Indian Ocean countries – mostly related to preparing for extreme weather events (e.g. cyclones). Went to gem museum where she learned some useful things about jade. Three types: utilitarian, commercial and imperial. Wasn't allowed to take photographs of the museum, but useful and interesting information there, including info about the jade emporium that the photographic gallery curator had mentioned. Found out that emporium was due to be held on Monday (16th).
- Discussed plans for the coming weeks, including whether to go to Mogok and decided not to as rubies are small players

in comparison with the jade story. Decided it would be better to visit some of the sites that the geologist recommended around Mandalay.

Sunday 15th September

- Agreed to visit a craft fair held at the opening of the Tourist Burma Building opposite Sule Pagoda restored by Turquoise Mountain (Prince Charles' foundation). On the way, we passed a house on 38th Street which was removing plants from the façade. Stopped and spoke with the woman who lived there and asked about the plants. She said the plants they had removed were banyan which are a major problem for the building. When I asked the name of the other smaller species, she said "no name, they are natural". Documented YCDC trash cans along street – metal frame designed to hold plastic trash bags. Plastic being used to collect plastic, which all ends up in landfill.
- LB met the country director of Turquoise Mountain and had brief conversation. He was overheard saying to someone else 'We will teach them what to do with these old buildings.' When asked 'Do they not have any ideas?' he answered 'Well, the chief minister has a vision, but we have shown them what can be done.' They work closely with the Regional Government, the chief minister. He was a political prisoner, lived in the first building they renovated. This one selected by him for renovation. The building had been the first department store owned by Burmese. Built in 1905. Were forced out of business, they used the building for a film company and a magazine. Bombed in the war, used to store and distribute rations. Then became Tourism building

after the war, but went into disuse. They started renovating it in 2016. He has been here since 2014. The first Turquoise Mountain renovation was a building on Merchant Street opposite the Mahatma Gandhi Building. Architect 1, whom LB had met during her visit in April 2018 was the architect of record for the renovation. Browsed the stalls (which included recycled plastic products) and had a coffee at the temporary café which was being run by Rangoon Tea House. After heritage building we went to find hydroponics café that LB and JC had visited last time they were here. It was closed so we went to Nourish, the café downstairs. On the way, we documented water/electricity/stormwater infrastructures – blue water pipes were particularly prominent components of these assemblages. Then walked along Zoological Garden Road, past colonial church and British Embassy residence.

- Spent afternoon at the Yangon Zoo – full of ponds and trees and was markedly cooler than other places we had been during the day. Interesting use of bricks in animal enclosures. Porous structures, covered in moss. Met snake charmer and managed to speak with him a bit, language was a barrier so couldn't have an in-depth conversation. Watched him cleaning out the alligator enclosure. Took some video footage and photos of our conversation and his tattoos (made with snake venom). He showed BC some video footage on his phone of his house which seemed to be a shrine to snakes. Says he works as a snake charmer, in addition to his work at the zoo. Introduced a woman who works at the zoo and is also a snake charmer – she showed

smaller tattoos which are on her hands. He said he has been charming snakes for 30 years and has been bitten around 20 times in his life.

- After the zoo we visited Kandawgyi Lake. Weather was very hot. Tried to find water infrastructure – BC had heard there was another pipeline similar to GyoByo there but didn't find it, instead observed and documented modern water structures (pipeline and water tower). Lake water looked pretty green with algae in places – need to look at the info about the pollutants in more detail. Started walking around the lake but large parts of the paths were closed due to demolition/construction which forced us to walk along the road instead. Became aware of the huge apartment blocks and high-end developments adjacent to the lake, particularly one called Sangri-La Serviced Apartments which we thought might be linked to Sule Sangri-La complex.
- Caught a taxi from there back to town and as we drove through the area we saw a line of banks which seemed to be connected to the complex, including KBZ bank. These are visible on google maps along Dobe Lane.
- Went back to the hotel. BC spent some time in the street videoing the bats, geckos and birds that inhabit the building facades along the streets. Went to Rangoon Tea house and worked. Agreed to go through the questions for the heritage organisation we would visit in the morning in advance of the interview and split them into themes. We also agreed to try and arrange a tour into the delta including Twante, via the NYDC site.

WEEK 2

Monday 16th September

- Spent most of the morning in Cafe working on project ideas. Went through questions for the heritage organisation in advance of the meeting. Went to their offices on 41st Street. Walked into a packed room, full of people working around tables, in workshops, hovering over laptops etc. Heritage consultant 2 greeted us, but we were early so went and did some photography work on the street outside the office. Opposite the buildings was a demolition site awaiting construction. Due to the absence of the building we could gain insight into the adjacent buildings – exposed brickwork facades, view of back alley structure, infrastructure on the buildings etc. Brick wall provided niches for birds, particularly pigeons and sparrows and plant life!
- Walked from the heritage organisation's offices with heritage consultants 1 and 2. Chatted about their organisation and their work as we walked. Took us via one of the alley projects which was incredible to see at that time of day. Sunshine hitting one side of the alley, illuminating the paintings and plants on the walls. Space became luminous, vibrant, colourful. Such a contrast to the alley behind the hotel. Spoke about the painting and gardening initiatives. Explained that they had planned to grow edibles as part of the alley gardens but they had problems due to rats and need input from experts. Heritage consultant 1 explained a bit about her permaculture experience which has informed their work, and her background in governance (formerly worked for EU).
- Went for lunch at Pansuriya (which seems to be very popular and commonly used for meetings). Began by explaining the MONASS project, including conceptual framework and fieldwork trips so far. Spoke about city workshops and asked if they would be interested in getting involved. Talked about the work they are doing with heritage restoration and regenerating trash alleys and their participatory approach – employ a user-centered approach that enables people to participate in reshaping their city. Beverley seems more focused on the practical work around infrastructure, and in the past has worked on projects oriented around climate change and flooding. Very informative conversation about the practicalities and technicalities of the back alleys and associated infrastructures which opened up some interesting angles, and confirmed dynamics that emerged during pre-fieldwork research.
- After the meeting we decided to visit some of the specific back alleys that heritage consultant 2 had recommended. Returned to the one we had visited near their office, which was being visited by other tourists (taking photos and selfies). Decided to leave as it all felt quite intrusive. Light had changed completely since we walked through a few hours earlier - the whole alley was in shade. Also noticed security cameras around the alley which created an awkward feeling. Decided to move on to the next alley, which was closed – gates locked, but took some photos of the artwork which featured some of the sponsors including CocaCola. Walked to the next alley which was still under construction. Amazing to see the amount of work being

done on the core infrastructure – drainage channels etc.

Can imagine how much impact the alley restoration must have on the residents of the buildings: clean alleys mean they can open back doors, increases ventilation, cleaner environment, less odours, more space for children to play, space for income generating activities etc. Spoke with a man in the alley who was very proud of it. Everyone seemed very pleased that we were there to see the alley – very warm and welcoming. Even though alley had been cleaned, rats were still in evidence. Parts of the alley covered in what looked like bleaching powder – reminiscent of Chennai.

- Went to visit an eco-tourism organisation that LB had contacted previously to organise the DS18 student trip. Spoke with them about the logistics of a trip south of the river to Dala and Twante and into the delta. Lots to explore in relation to salt, New Yangon developments, tube wells, mangroves etc. Spoke a lot about the salinity intrusion after cyclone Nargis, spoke about how badly Dala Township has been affected. Staff in the organisation seem very knowledgeable about ecology of Myanmar. Specialise in bird watching tours, started talking about migratory birds and dragonflies.
- On the walk back to the hotel after dinner BC passed people separating plastic and other recyclable items from the YCDC bins along Merchant Road. A man and woman were working together in the dark with head torches, both wearing protective gear. Medical waste in evidence – syringes etc. Took short video clip.

Tuesday 17th September

- Spent the day visiting Dala Township across the river. Walked to ferry terminal from hotel and caught morning boat along with other commuters. Took a rickshaw from the ferry terminal to a plastic recycling workshop. Rickshaw driver told me he came to Dala after the 2004 tsumani. On the way saw construction materials and sand mining along the road adjacent to the river (see GoPro footage). Spent quite a long time talking with director of a plastic recycling company, and a Canadian volunteer. The project, was established with pilot funding from the EU, now it is self-sustaining. Building made out of recycled materials – mostly constructed by themselves. Very labour-intensive process – partly made by forming bricks from polystyrene. The company has about 20 employees, mostly women. Many work from home so they can manage the work around their other responsibilities, such as childcare. Photographed the building and the workshop space, and the materials they use which are sourced from various locations (these included various kinds of plastic, rubber, cement sacks). Some of the plastic mentioned was taken from fishermen, some from the local dump, some from construction sites. Canadian volunteer emphasised that people are very used to recycling waste, far more so than people in the UK and US. Also spoke about links between plastic and monsoon – seasonal clearing of drains and stormwater channels.
- Houses next door to the workshop were all on stilts and the ground beneath them was covered with water – the area is obviously very swampy during the monsoon season. Water underneath the houses was filled with plastic (and very

large snails). Lots of clothes drying outside - sunshine must be welcome after many months of rain! Contrast between Yangon and Dala is very marked. Tuktuk driver spoke about problems with drinking water there. Ponds linked to monasteries are an important source of drinking water. Part of the Buddhist tradition of giving / donating water. Surface water storage means that they also collect pollution / runoff from the surrounding area (the plastic recycling expert said she wouldn't drink from them, and tuktuk driver also said he drank bottled water).

- The plastic recycling expert helped to organise a tuktuk to take us to the local dump, also recommended as a potential site to visit by the plastic waste activist. It was much smaller than the Perungudi dumpsite in Chennai. Small number of male and female waste pickers, sorting through waste. Seemed to be coordinated from a small shack in the middle, not sure whether they were employees of the dump or not. From observations in Yangon there are obviously recycling economies around waste. Observed YCDC truck dumping household waste. Large proportion of the waste at the dump was plastic. Site was surrounded by drainage channel, plastic waste travelling out of the site carried by water. Watched birds and dogs interacting with the rubbish. Spent time filming and photographing the site, LB collected plastic samples.
- On the way from the dump back to the ferry terminal we went past site where they are constructing the new bridge from Yangon to Dala, area likely to change drastically in coming years. Infrastructure will enable the other developments to happen. Increased connectivity to Yangon

and resulting expansion will have a huge impact. Very conscious of the conditions of some of the roads – very muddy post-monsoon.

- At the ferry terminal saw single-use plastics along the river banks and being thrown by commuters into the river, evidence of land to ocean transport of plastic. Filmed creatures on the shoreline, including mud skippers as well as the usual crows and dogs. Tidal forces obviously in action and highlighted by the movement of trash in the water. Canadian woman at the plastic workshop had recommended looking at the river at low tide to see extent of the plastic pollution. The plastic waste activist also spoke about the quantity of plastics being deposited onto river bed.
- Back in Yangon, we had lunch and took camera equipment back to hotel to download material and change batteries. Went out again with the aim of going to a market LB visiting during previous trip. Walked up Sule Pagoda Rd and documented the building constellation around the flyover. Seems like they will be a significant group of buildings to research in relation to the extraction wealth that seems to be driving urbanisation, including the Sangri La hotel (former Traders Hotel). There seem to be connections between these developments and certain companies linked to the jade trade but needs further exploration.
- Walked around and recorded food stalls and street markets. Took some footage of the food stands and betel leaf sellers (*paan*), all of which use plastic bags to package and sell food. Shops doing a lot of business. Market we wanted to go to was closed when we got there so decided to walk to

Junction City Mall. Incredible to see the range of high-end brands in the mall (Coach, Levi's Body Shop, Clinique, l'Occitane, Este Lauder, Espirite, Versace, United Colors of Benetton, Havainanas, Donuts, Hugo Boss). Most of the high-end brands are on the lower floors, and the shops become more low-end the higher up the mall you go. Took video footage of the inside of the mall, the stores and décor.

Wednesday 18th September

- Woke up early to meet our tour guide for the day. Left hotel at 7.30 and drove along the Insein Rd, north towards the Hlaing River Road and across the Hlaing River (Burmese name for the Yangon River). On the way the guide told us about the archaeology day he had been involved with the day before. Visited a community living near Maliwan (?), an ancient settlement south of Yangon (dated 2 BC?). Apparently, it consists of earth-sided buildings and is a sight of global significance. Possibly the world's oldest maritime commercial route - part of the Maritime Silk Road. Site is covered after rainy season with soil to protect the structure and becomes encroached with grass so requires cleaning. Explained that the area, and the site is affected by the monsoon. Incredible that the buildings survive this long! Situated in a monastery. Part of a community heritage strategy – educating the community to take care of the site. Many archaeological sites, but government cannot maintain all. Most are in the Mon state - coastal region. Affected by floods in rainy season. Also mentioned a site called Suvarnabhumi in Myanmar (means "land of gold"). This was apparently formerly the old capital city.
- As we drove towards the bridge crossing we passed through an area called Ward 7 that seems to be home to some significant developments – possibly in preparation for the new bridge construction. Includes a complex called Junction Square (possibly linked to Junction City mall?). Fishing market close by, where DS18 student reported problems with security – people very reluctant for him to take photographs. [This now makes more sense considering the high levels of surveillance that appear to be in place]. The site of the fish market is also adjacent to a marine college and shipping yard, an area which is also opposite where the proposed sluice gate will be constructed. [Need to check this].
- On the other side of the bridge we passed an area of high-end villas - FMI City. Gated community and our guide mentioned that it included a City Mart shopping centre. Opposite this is the Industrial zone –predominantly garments and furniture. Also saw a lot of agricultural related companies including a JCB office. Marked contrast between the gated community and the informal settlements that have sprung up alongside the industrial zone to house the workers. Construction trucks carrying sand evident. Barges carrying sand on river. Banana plantations (and bamboo plantations) on the right after the bridge. Spotted the New Yangon City Development company entrance not far after the industrial zone. They have clearly established an outpost there, presumably this area will be the first phase of development.
- Took a detour off one of the side roads along from the NYDC site. [Apparently the village is called Mar Ta Kohl Na].

Walked along the road and stopped at some of the houses along the way. Whole area is lush paddy fields, very waterlogged. Dragonflies everywhere! BC spent time filming dragonflies but they are very difficult to capture both on stills and film. Saw what looked like *Pantala flavescens* and Soe said they are called “rain dragonfly”. Spent quite a bit of time at one house in particular, spoke to man and his wife. House was situated next to the road. Tube well (which our guide called ‘artisan well’) was located in front of their house. Said it was ‘good water’ but apparently they only use it for cooking, not for drinking. Spend 1,500 for bottled water (not sure how often though). Also harvesting rainwater. Categorisation of different types of water for different purposes – similar to Chennai. Noticed shrine in front of the house –our guide said that this was the ‘spirit house’, which included a Kanyu plant. Shrine is to the Buffalo nat –he later told a story about the nat related to the water in Dala Township and why it is salty and not suitable for drinking. Apparently they were previously rice farmers, moved to this place after they bought the land from a fellow farmer. Road has been there for 10 years but has only been concrete since 6 years ago. Apparently, there was no government support to surface the road, the villagers did it themselves, providing their own funding and labour. When we asked whether the area was likely to change in the future, they said it would. Aware of NYDC plans, said they had been informed by the government at a village meeting. Gave very noncommittal response to the proposals presumably they cannot be critical of a government initiative. Comments about beautiful villages

and not wanting to live in apartments (because of knees). Woman not well because of heart problems. Mentioned links with monastery so well connected. Son (the venerable monk) is supporting their income. Possible reason for why they could get land next to road in an advantageous position.

- Walked back towards the main road and observed cracks in the concrete surfacing - evidence of the mobile, swampy land beneath. Main crops rice and bamboo - water reliant! Looking at the differences in topography between farm land and road (which was raised about water levels), it looks like it will be a huge undertaking to fill the area to prepare the land for construction.
- Stopped for tea at a roadside restaurant further down the road. Our guide explained that the area was famous for its beautiful farmland which is full of birds, especially good in winter season! Very biodiverse. People visit there from Yangon to get away from the city. Named a variety of birds, most of which were common species, many of them associated with human settlement.
- From the village we visited Paung Taw Choke pagoda which is a newly constructed pagoda famous for its snakes. According to our guide the snakes come from the forest nearby. Vegetarian snakes, only feed on milk. People come from all around to visit. Pray for prosperity and good health. When we arrived, we met young boys selling fish ‘donations’ which you could release into the ponds around the pagoda for good fortune – similar to sparrows in town. Pagoda heavily monetised. Paid to have photograph with snakes, put money in the donation boxes, and purchased

snake skin (shed by the snakes) for good luck. Pagoda was very busy – no westerners but this is possibly because of the rainy season, might be different in peak season. An array of fish as well as turtles in the pond. Apparently over 60 snakes in the pagoda. (Not sure whether they are Boas or Pythons – need to check). Fed by the monks who provide them with milk when the pagoda closes from 6pm. Then the snakes come down and feed. Had a conversation with our guide about their breeding season.

- Drove to Twante and stopped for lunch at the same place where LB and the students visited during the DS18 fieldtrip. Met the ‘local leader’, our guide explained that they have a network of ‘shareholders’ in the places that they work, and he is one of them. He is very knowledgeable about the area. Mentioned that we should read book called ‘Function of Burma’ if we are interested to learn in more depth about Twante. Available in library linked to Twante pottery museum which is full of colonial era books.
- From the restaurant, we travelled to a Twante pottery village. According to our guide they use three types of soil to make pottery in Twante: one from mountains (laterite), one from paddy (clay) and one from canal (sand). They mix these in order to produce the clay for pottery. Used to export pots from Mawdin (?) to India, by boat. Tradition since ancient times. Twante is a strategic location because close to sea. They mentioned that it has had many names, changed due to different kings. Used to be the capital of Myanmar. Once mixed the clay is left to ferment for one night. Bamboo and rubber trees are used for firing. Heat the kiln to high intensity initially and then leave for three days

to ‘smoke’. Can control the temperature of the firing by using different types of wood. Apparently, the pottery workshops work throughout the year – they are covered which makes this possible. Labour comes from the surrounding area. Prices of raw materials fluctuate for a range of reasons. One of the workshops we visited was making fuel efficient stoves for Korea and India as part of carbon reduction initiatives.

- Arrived at Dala Ferry terminal and tide was much higher than last time we came through. 6 hour intervals, high and low tide. Connected to lunar calendar. Now three days past full moon. Nearly 4 pm and quite high tide. Apparently Hilsa do not come this far up the river (to Yangon) because the water is very dirty. Our guide pointed to the river and said, “do you see the colour!” Similar trends to Dhaka, in terms of interactions between fish and pollution. River very shallow, because of landslides. At the moment it is approximately 16-30 feet deep. They are not dredging but have dredged the Twante canal which used to be salty, but now fresh because of heavy rains. Hyacinth moving up river - so tide is stronger than river!!! (Same with plastic bottles)
- Talked with our guide about monsoon withdrawal. He said he didn’t think it would rain heavily again. This is the last of the rains. I asked how he know. Apparently there is a belief that if there is heavy rain before full moon day then the rain will not be very heavy after full moon day. (And reverse is true). He said he thought there might be two or three days rain again but only showers and by that time we will be in the ‘dry zone’ so will not be affected. Said he can predict the

weather by intuition and signs like the behaviour of birds, but it “depends on how much carbon!”

- After returning to Yangon, LB went for a walk and found a large drain being constructed along the railway, along the line where a drainage canal was planned when the city was first laid out by the British. Found Ruby Mart, one of the first buildings constructed in the city with jade money.

Thursday 19th September

- BC arranged to meet with an independent scholar to talk about the Myanmar calendar system (initial contact had been made by DS18 student during previous fieldtrip to Yangon). Spoke for almost two hours. Gave an overview of how the system works, using a calendar on a circle divided into 12 sections. Spoke about the influence of the moon and the sun on the calendar, mentioned that the calendar is based on a geocentric model of the Universe. Described some of the main festivals and where they fall in the year according to the seasons and their relation with the monsoon. Mentioned that Burmese word for monsoon is ‘moat-thoan’ (မုတ်ထွန်), derived from Arabic.
- After this meeting BC went to back alley at 41st Street to photograph and video it. Quieter than the last time and light was good so photographed the wall art, most of which has a nature theme. The alleyway has obviously become a place for people to come and take photographs (and selfies!)
- During this time, LB met a town planner and the heritage guide who had led the students on the walk of historic Yangon in 2018). Recorded interview with the planner. Asked the heritage guide about the Mahatma Gandhi

building on merchant Street as I had noticed that the planting that had been growing on its surfaces had been removed since I was last in Yangon. He told me that the building was highly contested and there is currently a court case about its ownership. Some want to restore it, others do not. The Mayor is in favour of restoring it. If a heritage plaque were to be put on the building, the YHT would be sued.

- LB then went to the Housing Development Building near St Mary’s Cathedral. Found the Association of Architects and all the other players in the housing and construction sector, with offices in the building. Photographed all the signs on doorways.
- LB and BC met for lunch. LB had a very successful morning meeting with the city planner and heritage guide. Managed to gather some useful insights into urban planning, water infrastructure, and the New Yangon City Development. Apparently, there is a website that lays out all the current developments happening in the city that is being put together / funded by donor agencies.
- After lunch LB and BC took a taxi to the Gyo Byu pipeline. Walked from Myanmar Plaza down No. 1 Industrial Road to the bridge where we could access the pipeline. LB took photos and BC recorded video footage. Pipe felt very different to walk on in the dry weather, compared to the wet when it is hugely slippery, light also very different. Could also feel movement of water within the pipe (possibly as I was wearing thinner sandals), in section near the valve could feel and hear the pressure of the pipe. Interesting to observe the range of activities and housing along the

pipeline. Saw the onion farming that architect 2 had mentioned and watched people engaging physically with the pipe and using it different ways: baby crawling and lying over it, woman straddling the pipe, men using it to transport heavy loads and as a place to sit and talk on the phone. Diversity of plants along the pipe, lots of butterflies also, and birds (mostly sparrows and crows), acts as a wildlife corridor through the city. Conscious of the change in sound as we moved along, from the noise of the road to the peace and quiet of the middle section. Pipe surrounded by flowing water, but not sure where it comes from, doesn't seem to be connected to the pipe itself. From the smell, it also seems that sewage is being carried in water along the pipe. Diversity of housing around the pipe, including informal settlements, which have constructed various ways of accessing the pipeline using bridges, ladders etc.

- Caught a taxi back to town from the main road. On the way back drove past Golden City Condominium. Huge development. Noticed that there is a construction site next to it, which seems to be a pattern to all of these sites. LB thinks this is related to zoning which enables these developments to happen. They stand out because they are all ginormous in scale – very different to the other buildings around them. Apparently any building over 8 storeys in height has to be designed with seismic events in mind, but not sure what this involves.

Friday 20th September

- Rained during night, started just before 3am. (Also rained the previous night - felt cool in the morning). Left the hotel

just before 7.30 to travel south to Letkokkon on the Gulf of Martaban. Met our tour guide and took the Dala ferry crossing. Tide much higher than the previous times we had been there. Ferry also much busier as it was early morning, lots of people commuting from Dala to Yangon. Met a taxi driver at the Dala side, he was from Letkokkon village. Drove from Dala to Kyaik Da Note pagoda.

- Not sure what road we travelled on – unnamed on Google maps). Lots happening in relation to the roads. Drainage ditches run alongside the roads - similar to Bangladesh - multi-purpose fish-agriculture. Young men fishing in roadside canals. According to our tour guide, farmers typically own around 100 plots, scattered all over, not consolidated. Plot is typically 50 feet square. Land doesn't vary by elevation (all lowland), but proximity to river can influence land value. Land owned by government on lease system. Lifetime lease hold. Ownership passed down generationally from father to son. Land is farmed using small scale machinery – mostly Chinese made. Co-op systems for machinery ownership. Used to be ploughed by oxen but now all machines. Observed trees around villages, and birds of different species. Lots of sparrows! Houses on stilts. Mud influences transport and mobility - no wonder people want to be near the roads! Lots of road construction going on, piles of raw materials and aggregate alongside the roads. Two main types: red rock which our guide described as laterite, very crushable. Also a grey stone, possible granite which is very durable. Apparently from Mon state (southern part of Myanmar). Sour guide also mentioned the names of the different soil types, Gawang name for red soil.

- Stopped at Kyaik Da Note pagoda on the way to Letkokkon. Apparently it had been affected by an earthquake in the past which destroyed the top of the stupa. Tip of the old one (banana bud shape) had been kept next to the main stupa (umbrella shape). Our guide explained the different aspects of worship: flowers for freshness, candles for light, incense for good news, water for cooling (elemental ideas symbolises through objects). Many small statues of Buddha being sheltered by dragon (or Naga snake) - looks like cobra. Known as Naga Buddha statues. Connected to story of Mucilanda protecting Buddha from rain and storms after he gained enlightenment.
- Drove from the pagoda to Letkokkon through low-lying cyclone prone land. More road construction in evidence, apparently, they are trying to widen road by 3 feet on either side. Soe mentioned that this is an Important road that is relied on by many villagers. Dangerous as two cars cannot pass at once and accidents happen frequently. Bamboo, clay, plastic rainwater harvesting assemblages on the houses. Rice straw and piles of sand. Goats but no cows. Villages really small (300 - 500 people average). Roads are raised to avoid water logging – similar to Bangladesh - sense the impact they have in a hydrological landscape.
- Visited village in Ywathitkon where they have initiative a mangrove restoration program. Livelihood diversification has been enabled by mangrove conservation and villagers have started trapping (brown) crabs with 'improved nets'. Now catching double the crabs that they caught previously. Apparently this new technology came from neighbouring village, but not sure who introduced it. Village leader (head of 5 villages) showed us around. Mentioned that he had been for training in Ho Chi Min city, some kind of knowledge exchange project but not sure who funded it. Obviously some kind of 'model farmer'. Spoke about his efforts to rehabilitate the mangrove forest in the area and the difficulties involved. On our way to the mangroves he pointed out shrimp farming – carried out by 'cronies' from Yangon and causes problems for the mangrove project. Cronies don't want the mangroves because it affects the shrimp farming. Villagers have seen big improvements in species diversity since mangroves arrived. Invited to the village leader's house. He mentioned that he is Hindu, his grandfather originally came from India, moved to Myanmar from New Delhi after WW2.
- Travelled from village to nearby beach where they were getting ready for October season and Full moon festival. Apparently, lots of people travel from Yangon to the beach for the festivals. Place is famous for fried Hilsa, women in one of the beach shacks allowed BC to watch them preparing it and take video footage. They mentioned that there are less Hilsa available in the rainy season at the coast (possibly because it corresponds with migration/breeding time so there are more in rivers than sea at that time).
- Lots of dragonflies. Need to find out more about their patterns in Myanmar. Indian roller bird - on wires. Sand pumping at bridge –but people not happy about photos.

Saturday 21st September

- Today we left Yangon and made an early start for the bus ride to Bagan which was scheduled to take around nine hours. Bus journey was a good opportunity to get a sense of the landscape as we travelled north, roughly following the Sagaing faultline. Observed clouds hanging over the ridge to the west hand side – relations between weather and topography clearly visible. Took photos and video footage although not great quality due to movement and filming through the bus window. Stopped at motorway rest stop with bustling restaurant which was incredibly busy. Travelling along Mandalay Expressway, surface made of concrete. Hardly any vehicles - no trucks allowed to travel on it. Apparently, the expressway is known as the “death highway”. Facilitates shorter travel time between Yangon and Mandalay, but very dangerous and does not comply with international standards. LB photographed and videoed geological cuts through landscape and sedimentary formations. Landscape became more arid as we reached the dry zone. Fewer pagodas were visible from the road, but apparently, they are mostly situated along the Ayeyarwady. Farming systems changed from rice to rain fed. Maize, chillies, lentils, sesame, and chickpeas being grown. Ploughing with oxen, rather than with machinery as in the delta, possibly indicating lower incomes. More livestock grazing – mostly goats. Trees become more like dryland species. Two sightings of road side trash burning, which the plastic waste activist had mentioned. Mounds of plastic trash also visible along the road. Turned off from main highway onto two-lane bitumen road to Bagan. Incredible

geological formations as we approach Bagan. Unusual shapes which looked like volcanic eruptions and snakey forms.

- Arrived in Bagan as sun going down. Amazing to see silhouettes of pagodas in the dusk. Earthen formations rising from the ground like giant termite mounds, all built from red bricks. Hotel was located on river bank, next to archaeological museum. 12th century pagodas in the hotel grounds surrounded by giant trees. incredible location and views of the Ayeyarwady River.

Sunday 22nd September

- Started raining heavily around 2am. Monsoon still here in the dry zone. Not sure whether this rainfall is part of withdrawal? BC took audio recording of the rain but too dark for video. Met at the riverside in the morning. Spent some time recording a large group of *Pantala flavescens* dragonflies swarming along the river edge. Birds feeding on them. Definitely seem to follow the rains. LB recorded river and sedimentary movements.
- Spent the morning visiting the Bagan archaeological museum. Incredible painting of Old Bagan in the entrance hall. Exhibitions included statues of Burmese kings; quadrilingual stone inscriptions from 12th century AD; brick-making display (including inscribed bricks from Pagan period); Bhuddist art and iconography. Useful maps of ancient kingdoms and settlements.
- Spent the afternoon walking around Old Bagan and observing the brick stupas. Observed bins made from old tyres (which had been painted and decorated) all around

the town as part of an anti-plastic campaign. Had lunch at roadside shop. Earthen forms of stupas everywhere – incredible use of bricks. Walked to the Bu Phaya pagoda along the river – incredible dome shaped stupa covered in gold-leaf. Walked down to the river bank where there were boats for hire and people selling honey. River was thick with

WEEK 3

Monday 23rd September

- No rain during the night. Early start as we had arranged to visit Mount Popa, an extinct volcano. Travelled through mist covered undulating landscape along bitumen covered road. As we approached Mount Popa it seemed to have rained during the night or early morning, although it has not rained near the hotel – evidence of localised rainfall patterns. Also saw more piles of plastic trash by road and signs of burning. Observed one Hoopoe bird which apparently visit Myanmar during October to January.
- When we arrived we first visited the Popa Mountain Park Forest Department's Environmental Education Centre located at the base of the mountain. Spent time speaking with female park employee, a scientist. She took us around the museum and showed us their display boards showing the various flora and fauna of the area and a topographic model of the park. Outside the museum there was also a medicinal herb garden featuring species native to the park, enabled by the above-average rainfall of the area.
- From the museum, we went with our guide to the start of the trail path which led up Mount Popa to the 'true

sediment, sediment at the edge of river glitters like gold. Took video recordings - good way to capture the liveliness of the river. Walked back to hotel and watched the dragonflies which were still swarming at the edge of the river although higher in the sky. Atmosphere very humid, with lightening displays.

summit'. He explained that the mountain was 1,518 metres at the highest point. As we walked we travelled through different ecosystems, from pine forest to hill forest to evergreen forest and then grassland forest. Incredible sounds as we moved through the forested areas, watched butterflies in pools of sunlight. Forest conservation & monitoring is required due to illegal cutting of trees. Vegetation and temperature changed as we ascended, and mist cleared the higher up the mountain we went. Traces of geological activity and erosion also became more active the further we walked, changing with elevation, topography, gradients and the force of erosion. Our guide pointed out different types of rock (some sedimentary and some metamorphic). Rock from volcanic eruption is grey/white. Apparently rock from the mountain is taken for cement which causes problems with landslides and erosion. Spoke about weather patterns and guide mentioned that it often rains on one side of the mountain and not on other side. Forest pattern is also different on leeward versus windward side. He said that central Myanmar is something of an oasis with heavy rains in October. The path we walked along was made by the Myanmar military 10 years ago. Also passed an abandoned building which was a former Buddhist retreat.

Nearby was a helicopter landing pad for the construction of the telecommunication tower situated on the top of the mountain. Stopped to look into the crater of the volcano. Guide pointed out a group of leaf monkeys in the crater which feed off fruit during rainy season. Saw them briefly crashing about in the trees. Very conscious of the amount of plastic deposited all the way up the mountain. Path transitioned into series of stone steps as we reached the summit. Ate lunch at the top of the mountain underneath the telecommunication towers and a Buddhist stupa – Swarms of *Pantala flavescens* dragonflies at the top! After lunch we descended the mountain and tried to take short cut route but it was far too perilous!

- Our guide took us to a deer park situated within a sandalwood forest at base of the mountain (apparently sandalwood trees are not native to Myanmar but brought from India in the 1950s and planted in the Popa region). Termite mounds in evidence throughout the forest.
- Returned to Old Bagan. Spent the early evening walking around the pagodas – photographing and videoing them. They looked particularly picturesque and atmospheric as the light faded. It had rained there during the day and saw *Pantala flavescens* dragonflies around pools of rainwater that had formed on the dirt paths between the pagodas. Met guy at local restaurant over dinner, originally from Yangon but now works at Blue Ginger Michelin Star restaurant in Singapore. Here in Bagan for a holiday with his family, staying in the same hotel as us. Told us about the colonial bridge (Goteik Viaduct) near Mandalay. Railway infrastructure that joins two mountains. Mentioned that

cement for pagodas was made from resin of tree, mixed with lime.

Tuesday 24th September

- Woke up early again to travel to the mud volcanoes at Minbu, near the oil fields of Yenangyaung.
- Wadi's everywhere. Mist over snake range. Light rain showers. Road infrastructure around wadis - sand mining, trash burning, water management, road infrastructure, livestock herding, bird life. View of Mount Popa from a distance - cloud at the top, rest clear. Difference in the weather from day to day. Popa as weather maker...Series of flood incidents along the road. Crime scene! Changing rhythms of traffic. Traces of forceful flows left in trees and grasses and sediments and trash. Man collecting peanuts. Remnants of plants left on bollards and surfaces. Cracks in bitumen. Find out more about dynamics of rains at this time of year and how it relates to flash flooding and monsoon withdrawal etc. Dragon like formations in the landscape. Look into their significance! Coconut trees used as boundary markers (similar to eucalyptus in Ethiopia) also a cash crop so multi-functional. All of these landscapes are anthropogenic, even the "rural" ones. Trash piles located outside of town. Pigs rummaging in trash. Banyans, coconuts and bananas. Landscape of sediment. Mobilised by water. Roads as conduits for sediment. Landscape dotted with brown pools of monsoon rainwater.
- On the way to Minbu we passed through Magway, a military centre. Oil crops research centre. Agricultural research centres. Road transport ministry. Golf resort. Military

hospital. Presence of bridge indicates the importance of the area

- Arrived at mud volcano, greeted by dragonflies which have been at every site we have visited so far! Whole complex of buildings around mounds of grey clay burping methane. Shrines to Nats (looked like mother of dragons). Live snakes (and turtles) at the bottom. Dragon statues in pools of water where you make offerings of milk. Turtle in one of them. Mud volcano at the top of the mound, accessible by climbing a staircase up to a platform that has been constructed around it. Known as the Bubbling Serpent Dragon Hill. Mud volcanoes linked to dragons within the earth - holy place
- Way back – banyan trees along the side of the road, serpentine mountain ranges running alongside the road. Tired.

Wednesday 25th September

- Left Bagan in the morning to travel to Mandalay. As we left the hotel the staff mentioned that the high tourist season lasts from October to April/May, mainly six months and slows down for rest of the time as tourists avoid monsoon season. Travelled from the hotel in a pickup truck with seating in the back to a bus station where we caught a coach the rest of the way to Mandalay. Bumpy, patchy road initially and then we were back on the Yangon-Mandalay Expressway. (Apparently road being widened from 4 lane to 8 lane highway). Saw swarms of dragonflies along highway. Dry land systems more evident as we approach Mandalay. Prosopis along road. Livestock herding - goats and cattle and

fodder being transported on backs of motorbikes. Aware of light gauge railway along road to Mandalay. Tried to take video footage and photos out of the window – camera's capture weather conditions even if you don't notice.

- Aware of the smog and dust as we arrived in Mandalay. Could feel the air pollution and wondered why it seems worse than Yangon - maybe due to the number of two-wheel vehicles using low- quality fuel? Lots of markets, monasteries, and teahouses. Water infrastructure appears to be made from bricks. Lots of canals, full of water hyacinth and trash. Stayed in hotel located alongside a canal.

Thursday 26th September

- Woke and had breakfast on the hotel 'waterfront balcony' on the edge of the canal. Watched and filmed an excavator dredging the canal then took Grab taxi to Jade market.
- Arrived at market. Entrance was lined with motorcycles (made in China) and mostly young men milling around. Heavy security on the entrance, paid 2,500 Kyat to enter. Very busy. Spent some time wandering around, getting a feel for the place. Not many foreign tourists, saw three girls on the way in and one other western man. An assortment of different jade items being sold, phone used as an interface. Spent some time trying to understand the processes and interactions taking place. Took my jade ring to one of them to start trying to initiate conversation. Estimated the value to be around 30 dollars (each stone around 2 dollars). Walked down very busy alleyway, came across section where there were a group of powerful looking older men talking in a corner. Seemed like significant people in the

market so we stopped to see whether we could talk with them. Young woman introduced herself to us and offered to explain the market process to us, free of charge. Turned out she was the daughter of the market owner. She told us that her grandfather founded the market (in 1980?). Father now runs the market and she also works in the jade trade. Market is wholesale – different from markets in Yangon which sell finished products by piece. Customer base is mainly Chinese. Her grandfather was Chinese – speaks five different languages. Spent time speaking with her about the buying, selling, brokering process. LB filmed and BC asked questions (see video footage). Her mother was in the background the whole time – beautifully dressed and wearing extremely expensive jewellery. Introduced us to her father who was one of the men I had spotted initially. Walked us around the market showing us the different sections and various processes. Tables lined with brokers arranging deals with customers in China via WeChat and live video streams. Money transferred online, not sure how jade is transported. Arcades at the front of the market led to cutting and polishing operations at the back. Also large areas where jade and other stones are laid out and haggled over. In addition to jade, equipment associated with the jade trade could also be purchased from small stalls. We decided to buy a torch used for inspecting jade stones. The daughter of the market owners told us that her family runs one of the government licensed shops at the market, apparently there are around 10 licenced operations. We assumed that this meant the rest are unlicensed and trading informally (?). Need to have a certificate to transport jade

out of the country – a process that is likely to be riddled with corruption. Mostly people were fine for us to photograph and film but some sections of the market not so much. The owner’s daughter was accompanied by her boyfriend, for security! Jade carries luck – and is often engraved with different symbols which signify a range of things and also bring good fortune. Many brokers – long chains, everyone taking a cut (10%). Operations are also carried out on the phone using apps including Facebook, apparently many of these transactions are also linked to people who come as tourists.

- After leaving the jade market we stopped at a teahouse just up the street and observed the surrounding area which was congested with jade shops, Chinese dealers, food stalls and hotels. After this we decided to visit Kuthodaw pagoda – which includes hundreds of shrines housing inscribed marble slabs – known as the ‘largest book in the world’. Lots of Chinese tourists at the pagoda on organised tours, they didn’t seem to be worshipping but taking lots of photos and selfies. Spoke briefly with one of the tour guides who said he was from a town just over the China-Myanmar border. Outside the pagoda we saw a group of female Chinese tourists gathered around a small stall selling jade items outside the pagoda. Made our way to the top of the pagoda complex, which is situated at the foot of Mandalay Hill. Took photos of ‘cloud Buddhas’ in one of the pagodas on the way up. From the top, we had spectacular views of the city although lots of smog in the air and columns of smoke from piles of burning garbage. As we reached the top we encountered yet more *Pantala flavescens* dragonflies.

- Had dinner at restaurant around the corner from our hotel and arranged car for tomorrow with hotel owner.

Friday 27th September

- Arranged to spend the day driving around Mandalay. Hotel owner had organised a taxi driver to take us around, he explained that he was a fourth-generation Mandalay resident and has witnessed the city changing over time. Spoke a lot about the political situation, he is an organizer for the National League for democracy. Elections to be held in 2020.
- Stopped at Gaw Wein Jetty, where we saw teak being loaded onto boats to China, no controls over shipping. Also saw building stone mined near Mandalay. Oil from Yangon by truck to Thailand and Singapore. Saw small trucks with barrels to containers from bad to good roads. Mandalay economy based on exchange of goods of all types: teak, jade, oil. Cronyism operating in all of them. Passed large number of oil trucks, sand mining. We had been told that tourist barges and river cruises stop during the rainy season, but this is not true for boats transporting materials.
- Visited Thirty Caves Pagoda on Sagaing Hill, 400-year old caves housed 30 Buddha's. Then went to Ponnya Shin Pagoda with amazing views overlooking Ayeyarwady River where we could see boats being loaded and unloaded.
- From the pagodas, we visited the Delight restaurant on the edge of the river between two bridges: newer Ayeyarwady Bridge and old Ava Bridge, built by the British in 1934. We were told that the area around the restaurant was flooded

for weeks between July and August this year. When river is so full boats cannot travel upstream.

- From the restaurant, we travelled to the Kyauksen Pagoda (Jade Pagoda) in Amarapura Township. The pagoda is covered in 10,000 tons of jade and is apparently the world's first jade pagoda. It was constructed by the jade mining family of Soe Naing and Aye Aye Khaing. The Pagoda is situated next to the site of the new Mandalay jade market, which is under construction and not yet completed. We were told that many people will resist the relocation of the market from Mandalay to this site and there were protests last year about the move. The relocation is meant to upgrade the existing market and improve problems with traffic / transportation and poor security. Jade pagoda was extremely hot – heat from the sun absorbed by the surfaces. Lots of Chinese tourists here, seemed very excited by the amount of jade on display. Lots of photos and selfies.
- Taxi driver insisted on taking us to the silk weaving workshop in Amarapura, which have been famous for their handmade silk products for centuries.
- The final stop for the day was the Maha Sandar Pagoda. Next to the pagoda was the Khan Taw Mingalar step well. Our driver explained that now the well only fills with water up to step number seven but used to fill up to walkway in the past. August sept last year - heavy rain here. He explained that he has experienced heavy rains 10 times since he was a child. The step well was surrounded by the ruins of old pagodas – same brick style as those we had seen in Bagan – surrounded by ficus trees.

- As we drove back into Mandalay we passed the tallest building in the city, a hotel and Chinese owned shopping mall situated along the jade market road.

Saturday 28th September

- Early start, up at 5.30am, breakfast at 6am, left hotel at 6.30am. Took taxi to airport. Saw 'Garden City' housing developments along the way. Arrived at Mandalay International Airport. Signage in English and Chinese. Warnings about trafficking various animal products (tiger, elephant, pangolin). Took flight from Mandalay to Yangon, Yangon to Dhaka.
- Arrived in Bangladesh around 4pm. Flew in small plane (Bim Airlines), could see the whole landscape from Myanmar to Bangladesh. Couldn't always work out which delta we were flying over. Monsoon clouds over delta, land completely inundated. Blurring of boundaries between sea, land and sky. Monsoon rain on arrival, not what we were expecting. Fieldwork experiences trouble the monsoon patterns we had read about prior to travelling.

Summary

Final trip to Yangon was a very productive one. Although it was shorter than the time spent in Chennai and Dhaka it was more focused and concentrated around certain key themes and research questions that had been identified in advance (weeds and plastic), based on preliminary fieldwork visits. Nevertheless, the trip was invaluable as it led to new avenues of enquiry (e.g. links between jade and urban development) which would not have emerged otherwise. We made good connections with a number of people and organizations who expressed interest in the project and agreed to participate in the final workshops.