Diana Chan: China Reflection

 As a participant in Sustainable Urbanism’s pilot class, I see a bright future for the class to be offered in the future. In this reflection piece, there will be three parts. First, I will write my advice to future students in how to prepare for travel to China. Second, I will write my advice to the designers of the course, advising on how the course can improve. Finally, third, I will reflect on the learning component of the course and speak to its success.

 To start at the beginning, I’ve listed off my top ten must pack items.

1. **Traveler’s pack of tissues**: the bathrooms in China are mostly BYOT: bring your own tissues.
2. **RMB/Yuan in a traveler’s money belt**: many students ran into difficulties withdrawing money from ATMs so bringing China’s currency in a traveler’s money belt that you wear on the inside of your pants for security seems like your safest bet to ensure you never have to worry about having money!
3. **Sneakers as opposed to flip flops**: since the sidewalks in China are bumpy, even flip flops can start to hurt your feet!
4. **A camera**: pretty self-explanatory. You’ll want to take pictures!
5. **A bag you’re comfortable carrying around:** to survive the day, you’ll need to carry a water bottle at the very least, so bringing a bag that you can carry even up the Great Wall is a must!
6. **iPad over a laptop**: assuming you plan to turn off your phone like I did, an iPad or smaller-than-a-laptop device for emailing family and friends lets everyone know you’re safe!
7. **Snacks:** you might not be able to bring a water bottle past airport security but an extra water bottle in the bathroom to brush your teeth with is a good idea. Snacks for when you’re at the hotel or having downtime can sometimes be a lifesaver.
8. **Pen + Notebook/Sketchbook**: proved extremely useful for taking lecture notes, jotting down something you want to remember, or writing down the contact information of the Chinese students you’ll meet!
9. **Pain-reliever:** I didn’t bring this one, but it’s something you might not consider and something you might want to bring if you get any pain from long flights.
10. **Lotion**: this one may be a little more personal, but I had to apply lotion everyday because the humidity made the skin on my hands peel.
11. **BONUS**: this is not an item to pack, but I encourage ALL students to apply for the International Grant. The grant comes with a step-by-step to-do list and as long as you follow the steps, you WILL receive money.

 For advice on how to improve the class, I thought a top five list would be useful, clear, and concise. Along the way of this top five I also point out what was successful.

1. **Assign collaborative research early**: the first “research” topic of food to eat, and places to see, etc. was extremely successful. For a long time in that class, the people I worked with on this were the only people I knew in the class. I’d recommend assigning the real research topics early in the semester as well so students can get to know more people, as well as have a clear goal to their learning.
2. **With research topics in mind, set up American/Chinese student conferences before travel**: Shandong University was well prepared with student volunteers that we saw regularly through our stay. These students are perfect candidates to conference with us. If we had time to share our research topics, the Chinese students could begin to answer our questions or start connecting us with people who can answer our questions. Without this, many of our research topics were completely lost during our travels.
3. **Invite Chinese students to join our meals**: After many dinners to ourselves, the best dinner and one of the best learning experiences was the one where Stella, our Chinese student tour guide, invited and answered all our questions.
4. **Don’t be afraid to give more work if it adds value to our experience:** Not just me, but other students were surprised at how little work the class required—so we probably had the capacity to learn even more! For example, if the Chinese students gave us a presentation on their life as college students, which the Shandong Architecture students did, our students should have prepared a similar presentation.
5. **Hold class in a semi-circle**: This is simple, but I think it could go a long way. The room we had for the pizza party for example was set up this way and it might engage us to talk more. The more we talk, the more enriched the learning can be.

 Now finally, we ask ourselves, what did we learn, and what did we personally gain? To start, in the class I learned that there was such a thing called PM2.5. Before the class, I had never even heard of particulate matter, or that they were named for their size in diameters and therefore how severe they can be to our health. Getting familiar with PM2.5 also meant getting familiar with China’s major source of energy, coal.

 Shortly after, I also learned a new term: cultural sustainability, something that probably exists in China more so than in the US. I learned of traditional Chinese city structures as primarily rectangular, gated, and organized with axes. I learned that according to Feng Shui, Chinese cities often sat south of mountains that blocked winds, and north of water that cooled its residents. I learned that in China, commercial happenings happen right on the street, and don’t require formal plazas. I learned the typical layout of a Chinese courtyard house, some of which are now protected in China under cultural sustainability, like the one architecture firm BLVD renovated for their office space.

 I learned that the planning profession and the architecture profession seem to be growing in China more so than in the US, and I have a better understanding of why. Specifically, by 2025 65% of China will live in urban areas. This means that in 15 years, the population of the US will move to the city. Today, China has over 60 cities with over 1 million people but by 2025, China will have 221 cities (US only has 9). 30 of these 221 cities will have more than 5 million people. In the next 15 years, China will need to build houses for 400 million—comparable to rebuilding all the housing in the US.

 Change in China started about 30 years ago. What used to be 400 million living on a dollar a day is now only 200. Today, 90% of China owns a car. In Beijing alone, 5.2 million cars in the city burn 5 million gallons. A push for high speed transit has been underway. In 2012, 60,000 miles of railroad were laid down with 12,000 of them being high speed tracks. By 2020, there will be 650 miles of subway with 450 stops.

 To meet such fast changes, the design process in China is much more fast paced. The Great American Building in Cincinnati took ten years; in China, 300 of them can be completed in one year. One design in China is researched 1-2 days, with 1 day to iterate. Afterwards, a design is immediately picked and developed to render in 3 days. Architecture and planning begin to blur as scales of projects in China now often involve an entire city rather than one building.

 To wrap up my learning in the classroom, I researched Architecture2030, a US-based organization, started by Edward Mazria, committed to holding the building sector to sustainable practice. Architecture2030’s main challenge is to gradually increase the fossil fuel reduction standard for all new buildings and renovations from 70% in 2015 to 80% in 2020, to 90% in 2025, and to carbon-neutral in 2030.

 With Architecture2030’s Challenge in mind, my travels made me realize why the challenge is so difficult to realize. Concerning ourselves with not just architecture, but transportation, and air quality among other things was an incredibly humbling experience to remember that a lot of professions and disciplines need to work together to achieve a sustainable city. No problem exists in a vacuum, isolated from all other problems.

 I will summarize three of my favorite learnings from the three disciplines in China. At the National Engineering Laboratory of Coal-fired Pollutants Emission Reduction, I strongly felt a sense that students and faculty at Shandong were innovating for the greater good. With very little knowledge of the sciences, I understood that China primarily burns coal for its energy, but burning coal has led to the presence of SO2, SO3, NOx, PM2.5, and CO2--which all have adverse effects--in our atmosphere. Sulfur affects aquatic life, soil, vegetation and forests, and human health and Shandong University’s efforts and research in desulfurization or removal of sulfur are innovative. Similarly, the university also researches lab removal of NOx which affects the human respiratory system, and may even lead to smog and acid rain. In the US, few of us know of PM2.5, but most know of the effects of carbon dioxide. For these researchers, while alternate energy has been discussed as an option, they believe carbon capture or carbon storage, specifically in mineralization, is for now the most effective. Architecture is not the only sector trying to clean up the air of carbon dioxide.

 At architecture firm, BLVD, we learned just how difficult pulling off Architecture2030 would be in China. According to professional, Yun Du, China’s architects, while granted more freedoms by way of less rules and restrictions, architects in China receive less resources and support. Du talks about a lack of support in specifications, in systems and in design details. Surely products aren’t handed to architects with stickers that indicate products are sustainable. According to Du, the novelty of western skyscrapers will not escape China anytime soon but only grow because of the current manufactured and mass produced culture.

 Finally, I found the most shocking thing about the transportation sector in China from Zou Nan’s lecture on his traffic intersections research. Video captured a boy, probably less than ten years old, diagonally cross the busiest, largest, and widest traffic intersection I’ve ever seen in my life. The video is a good lesson to teach that while we solve few issues, such as providing infrastructure for humanity, sometimes solutions indeed create other problems. Just like while we are providing energy for China, or homes for millions, the created carbon dioxide is negatively affecting our environment.

 To conclude, sustainability is an issue across all disciplines, and innovators in all disciplines are putting forth their efforts to achieve a sustainable future. Researchers in carbon capture and carbon storage may argue with researchers in alternate energy, just as architects that want to practice sustainable design may argue with clients who want to save money or suppliers who cannot deliver. While I did not learn the magical solution to how architects can achieve carbon-neutral given limited support, limited supplies, and demands of clients to name a few obstacles, I do believe that educating on the hopes of a sustainable future is the right way to engage humanity. I also believe that educating on the small efforts across all disciplines making way in the sustainability battle is also the right way to engage humanity to work together. If we can learn to work together, and to compromise, I hope clients will learn to demand sustainable and carbon-neutral design from architects.