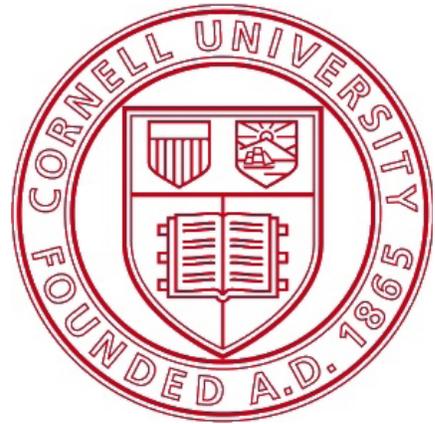


CORNELL UNIVERSITY & ZHEJIANG UNIVERSITY

JOINT WORKSHOP ON THE BUILT ENVIRONMENT, QUALITY OF SPACE, AND SUSTAINABILITY



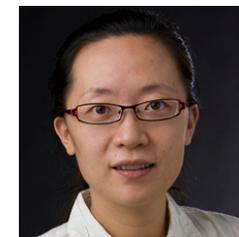
PREFACE

In 2012 the Department of Design and Environmental Analysis (DEA) at Cornell University and Department of Architecture, Zhejiang University (ZJU), China, launched a three year scholarly exchange project under the title “Built Environment, Quality of Space, and Sustainability.” Professor Ying Hua at DEA and Professor Lei Xu from ZJU are the lead faculty from the two programs.

At this time, there are more than 50 faculty and students from the two programs who have participated in this exchange and enjoyed the cross-cultural exploration of topics that both programs value. In December 2012 and November 2013, two groups from ZJU traveled to Ithaca to participate in joint workshops on spatial evaluation of new learning environments. Students learned and practiced behavioral research methods and were introduced to DEA’s human-centered approach to planning and design.

In December 2013, seven Cornell students, together with Professors Ying Hua and Jack Elliott, made a two-week trip to China, and visited towns and cities with very different scale: Jiande, Hangzhou, Shanghai. Part of the group also travelled for another week to Beijing.

This book documents the takeaway lessons the Cornell group learned from a number of site visits and various presentations from both government planners and university professors. The book also shares the story of the trip, and the reflections of each of the participants as they learn about a new culture.



Professor Ying Hua



Professor Lei Xu



Professor Jack Elliott

ABOUT THE TEAM



CAROLINA ACEVEDO PARDO is a M.A. candidate in Sustainable Design Studies looking at environmental impacts of different building typologies in Colombia. This trip opened her eyes to the challenges and advantages that China faces as it develops. There is an enormous potential for sustainable initiatives to take root, but as with any cause worth fighting for, it is an uphill battle from here.



ETHAN ARNOWITZ is a third year undergraduate Interior Design student in Cornell's department of Design and Environmental Analysis. He studies how environmental design impacts consumer food preference in commercial restaurant design. This trip allowed him to use observation techniques to document consumer behavior in Chinese mall and restaurant settings.



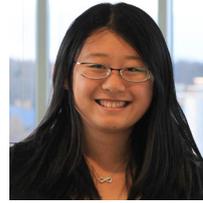
YANA AZOVA is a third year undergraduate working towards a B.S. in Urban and Regional Studies and a minor in Real Estate. Her academic interests focus on mixed-use development and sustainability practices in planning. This trip taught her about the Chinese government's efforts to balance sustainability and rapid urban development in cities of different scales.



LAUREN BIGALOW is a M.S. Environmental Psychology candidate with an interest in architectural programming. This trip was a fascinating learning experience for her: she was able to see what different Chinese cities valued spatially, and what they were planning for their architectural, urban, and sustainable futures.



RYAN BOLES is a M.S. candidate in Human-Environment Relations. His studies include a major concentration in Human Factors and Ergonomics and a minor concentration in Information Science (specifically Human-Computer Interaction). Visiting China gave him an international perspective on the priority that design professionals place on sustainability and universal access.



JING GE is pursuing a M.S. in Human-Environment relations with a focus in Sustainable Design. After spending the past 5 years looking into technical solutions to make our world more sustainable, she decided to shift and look at sustainability from a human dimensions perspective. She is interested in human-factor related studies on building energy efficiency, energy conservation, and energy management.



BONNIE SANBORN is a M.S. Environmental Psychology candidate in Cornell's department of Design and Environmental Analysis. She studies community resilience and social capital. This trip was an opportunity for her to see first-hand how another country addresses the challenges of creating sustainable, adaptable communities.

JIANDE

建德

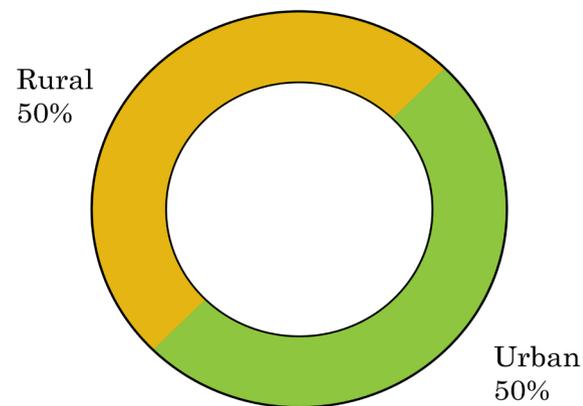


“China is a mix of styles. There are trucks overflowing with tarps, aluminum, and car parts. There are billboards with a man kicking his leg up and out of the frame, in a lame attempt at three dimensional advertising. There are Soviet bloc towers and Venetian condominiums, amidst acres of cranes and industrial complexes. In the night sky, everything looks slightly muted, despite the lights. The road looks worn. Talking about it later, Bonnie and I discussed how the goal in China isn't to stop progress, but to create resilient communities that can adapt to all of the changes the country is facing.” - YANA

The infinity pool at Pearl Plaza, Thousand Island Lake (Photo by Yana).

JIANDE was the first stop on our trip and served as an introduction to the differences between urban planning in China and America. We heard that Jiande was a “small town” by Chinese standards, but upon arrival we quickly realized it was much bigger than we expected. The metro area population is roughly half a million, with about 100,000 people residing in the urban center. In 2012, the population reached a 50–50 mix of urban and rural residents, whereas previously Jiande’s population was mostly rural.

Population Distribution of Jiande in 2012



The brightly lit towers and large apartment blocks hug the banks of the foggy Xin’an River, and nearby the Thousand Islands Lake serves as a major tourist destination.



Our time in Jiande was characterized by contrasts; the first morning, we met with the city’s urban planning department, while the afternoon found us wandering the tight and winding streets of the historic Xin Ye village. The next day we started standing in the rubble of Jiande’s redevelopment areas along the river, then watched the sun set while getting a tour of a luxury penthouse apartment overlooking the Thousand Island Lake. In just two days, Jiande taught us that China and America face some very similar challenges when it comes to balancing progress and preservation. This was a recurring theme throughout the trip.

“When I think about Jiande, two words in particular come to mind: transition and adaptation. The city of Jiande is in transition. I can recall passing by countless construction sites as we drove through Jiande and the surrounding areas. Undeveloped areas of the city are being built up and older areas that have already been developed are getting revitalized. In addition, the city’s population is steadily on the rise. More and more persons are uprooting from the countryside to inhabit Jiande’s urban areas. As these residents transition, they adapt to their new environment in some unique ways. I distinctly remember one example of said adaptation on the riverfront.

Our group came across an area where the neatly paved, well-manicured stone walkway that ran along the river gradually receded into the water. The area looked as though it were a stone beach of some sort. In the middle of this area, right before the water overtook the stone, an obscure medium-sized sculpture jugged out of the pavement. On either side of the sculpture, I remember seeing older members of the community (mostly women) beating on what appeared to be clothes with a stick. It quickly dawned on me what they were doing.

They were using this seemingly ornamental piece of Jiande’s cityscape to wash clothes. It took me aback a bit, for the waterfront area was very nice and it appeared to be fairly new. It just didn’t seem like a place where people (where I am from) would carry out a chore like washing clothes. This piece of our trip will forever stand out to me. It gave me a glimpse into how some of the newest residents of Jiande were adapting their traditional ways of life to their new, urban environment.

The myriad of possibilities for adaptation presents some huge opportunities for designers, researchers, and others that are developing the Jiande area. They must figure out how to balance the traditional and the modern. They must discover how to keep up with the state of the art without abandoning Jiande’s original identity.”

-RYAN

Doing laundry in the Xin’an River, Jiande (Photo by Yana).



“IN XIN-YE the doors are all open. People eat outside with bowls in their hands, because it is a time for neighbors to catch up and check in one another. The cobbled together, alley-like streets are full of old people and little children while the young are at work in the city.

Feng Shui is very important here. The steep, sloped mountain resembles fire, so the villagers built a lake in front of it to balance out the energy. There are small mirrors on top of doorways to reflect bad energy. The mountains here are steep and beautiful. It is a place where one can be at peace and take the time to reflect on the past.”

-YANA



Xin Ye historic village (Photo by Yana).

FACT SHEET

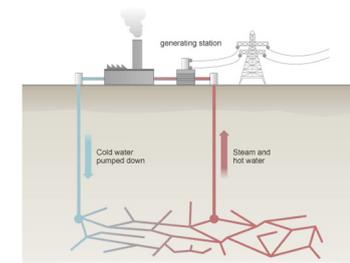
The Department of Planning in Jiande is responsible for a jurisdiction consisting of 10% farmland, 10% water, and 80% mountains. The natural environment largely shapes the built landscape.

Jiande wants to grow – city officials envision another quarter of a million people in the city center within ten years. They also want to protect the natural environment. Jiande aims to be the exemplar of an “eco-city” in China, with carbon neutral buildings and no window AC units.

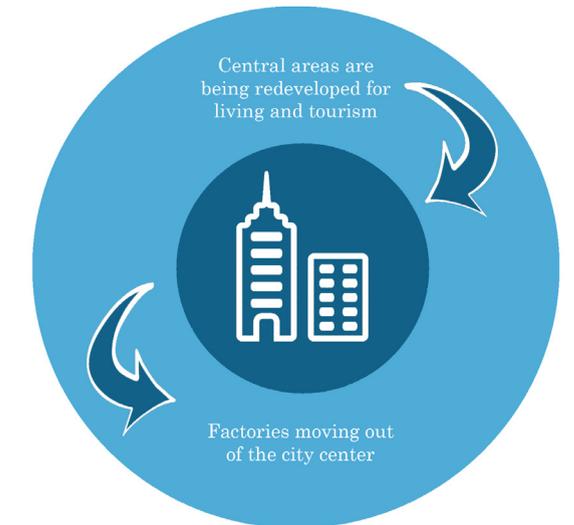
Water is a large source of energy for Jiande. This is partly because of the consistent temperature (14–17 degrees Celsius) of the lake. The other alternative energy source is solar. Most businesses use geothermal energy, while most homes use solar energy. The Xin’an River was once the sole transportation route through the area. As roads were built, the city of Jiande grew.

14-17
Degrees Celsius

The constant temperature year round provides a great geothermal resource.



City planners, however, still see the river and surrounding mountains as a guide for the layout of the city. Bus fare in Jiande has remained 1 Yuan, to encourage people to use public transportation—but personal cars are becoming more popular.



Jiande has 3 main areas: the city center and the two wings. Factories in Jiande have moved from the center of the city to the outskirts. Central areas, like the Chou Chou district, are being redeveloped for living and tourism. When redeveloping brownfields, the city builds 2–3 floors down for parking garages so the contaminated soil is removed.



Hangzhou is the capital of Zhejiang province and has a population of 8.8 million.

“ANY CULTURAL EXCHANGE opens the door to another culture and way of life. Our trip to China provided not only an immersion into the cultural history and contemporary issues of Chinese cities, but also introduced us to Chinese students and professors. I would almost say that these interactions were more important than the site visits and lectures, because they allowed me to engage in conversation about everyday topics. This brought the ‘Chinese perspective’ a little bit closer to home.

There are too many anecdotes to share from this journey, but the most impressive gesture of the ZJU students and faculty was their generosity. Not only did they host us for 10 days, they also took time off of classes and work in order to accompany us and show us a part of their country.



The Cornell team with friends from ZJU atop XiXi Mall, Hangzhou (Photo by Daniella).

In Hangzhou we met Gosia, a Polish student pursuing her PhD in Asian Studies at ZJU. Gosia graciously accompanied us everywhere and exposed us to Chinese street food, like bubble tea and bao'tze, as well as more Western novelties, like a café where I ordered a cappuccino. On one bus ride I sat and talked with Bing, a Masters student in Architecture, and she told me how much she loved and missed American hamburgers. Lu, another ZJU student, offered to take us to Lingyin Temple on our day off; as we explored the beautiful site and learned a few things about Bhuddism, Lu consulted with various monks about his own personal search for enlightenment. Later in the week, Gosia, Bing, and Daniella helped us to understand certain peculiarities of Chinese malls while we surveyed Xixi Mall for our case study.

Originally I thought that, in meeting Chinese students and faculty, the differences of culture and thinking—with respect to architecture and design—would be obvious starting points for dialogue and discussion. Even though we did engage in some friendly debate, it was the human relationships, and not the differences, that will stay with me. These experiences are the point of convergence that will allow for further dialogue or exchange of ideas.

-CAROLINA

Street scene, Hangzhou (Photo by Lauren).

HANGZHOU is an ambitious blend of forward-looking commerce and respectful historic preservation, but the city still manages to maintain what Dr. Ying Hua calls a laid-back attitude.



Worshippers burn bundles of incense for luck, prosperity, and health at Lingyin Temple, Hangzhou (Photo by Lauren).

“For a large and somewhat sprawling city, Hangzhou managed to contain a lot of trees and greenery. My American signal for “leaving the city” is to see forests and other natural elements that are wild and unrestrained. This proved to be a false signal at Lingyin Temple, and once again at the beautiful West lake.

When we took a bus to Lingyin Temple, I thought we had exited the city completely; it looked like one could step off the bus and take a stroll in the woods. I turned to Gosia and remarked that it was so quick to leave the city, only to have her respond that we were still very much in the city. The drive to West Lake looked very different depending on what side of the bus you looked out: on the right, the gorgeous lake wilderness, and on the left, luxury car dealerships.”

-LAUREN

IN 2001, Hangzhou's Department of Planning & Design decided to create a new Central Business District with three goals.



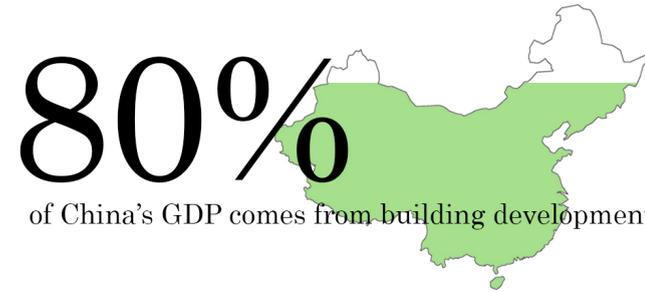
The Hangzhou Central Business District scale model (Photo by Lauren).

- 1) The city government wants to elevate the status of Hangzhou as a city in China.
- 2) The CBD is to be a means of reorganizing the city layout, by shifting the economic center of the city to the southeast side of the downtown.
- 3) The zone helps to protect the overburdened West Lake by constructing a mutually beneficial relationship between the lake and the buildings within the CBD.

Since 2003, almost 100 billion RMB (17 billion USD) has been invested in the CBD. City officials have taken great efforts to create a livable city center, that's both inviting to residents and businesses. While we were sitting in the board room, this all sounded amazing. When we got on the ground, the reality of it was different: the district is full of showy designer buildings and massive green lawns that may or may not form a cohesive neighborhood. The overall impression we got was that livability, while remaining an important goal for both planners and citizens, requires future strategic interventions to achieve.

FACT SHEET

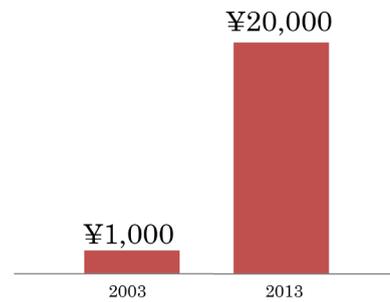
In 2003, Hangzhou was approximately 600 square kilometers, with 2 small towns surrounding the city. Just ten years later the city has grown to 3068 square kilometers, making it the third largest city in the Yangtze River region. The Yangtze River Delta has a population of 159 million people and accounts for 25% of China's GDP.



Historic preservation projects first began in 2006 as a natural response by academics and professionals to urban renewal efforts. 380 buildings, all at least 50 years of age, were targeted. The movement was guided by the following agenda:

- 1) Retain the historical memory of the structure and keep it relevant.
- 2) Revitalize existing spaces for modern use.
- 3) Make the space an attraction to supplement the economic growth of the surrounding area.

Property values per square meter have drastically changed over the past decade in Hangzhou.



Hangzhou's public transportation system—which includes high-speed rail, a subway system, busses, and free bicycle sharing for citizens—has been rated one of the best in the world by the United Nations.

Low Carbon Ecological Urban Development Started in 2010 with These Guiding Principles:



West Lake has inspired royalty, artists, and writers for thousands of years. The scenic locations within the site have been the subject of many paintings and poems. These works have, in turn, influenced garden designs throughout Asia.

Photo by Lauren.

The people of Hangzhou view West Lake as an important natural and cultural resource, and they have worked hard to preserve the green space on three sides of the lake. In 2004, a museum and administrative space opened at the lake, to help people learn more about the site and work to protect it from city expansion. These efforts were rewarded in 2011, when UNESCO named West Lake a World Heritage Site for both cultural and natural purposes.

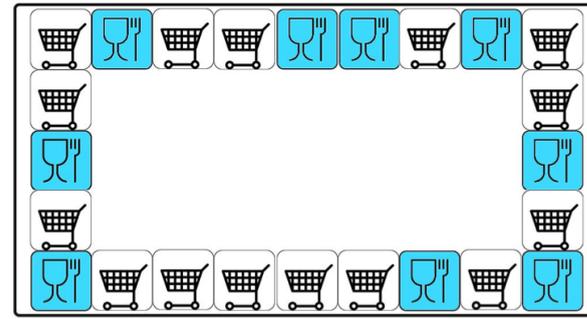
XIXI MALL CASE STUDY

As part of the joint workshop, the team conducted a case study at one of Hangzhou's newest large commercial complexes, XiXi Mall. The goal was to develop an understanding of space use patterns and provide suggestions for design improvement, based on two days of observation and analysis. Professor Xu of Zhejiang University asked us to highlight and explore some differences between a mall in America and XiXi Mall. Because of our group's specific skill set, we also chose to study ergonomic issues within the mall and urban planning issues in the surrounding neighborhood.

AMERICAN MALL



CHINESE MALL



The biggest difference between XiXi Mall and an American mall, to us, was the location and variety of food choices. Instead of a centralized food court with mainly fast food options, XiXi Mall boasted dozens of fine dining restaurants—as well as cafes, dessert shops, and faster food options. With the help of ZJU students Bing, Gosia, and Daniella, we observed various eateries in XiXi Mall to determine when and how they were most heavily trafficked, and how they interacted with nearby retail stores. We also scoured the mall for barriers to universal accessibility.

At the end of the two days, we joined our hosts back at ZJU to present our findings. A few of the key takeaways were:

- 1) Malls in China, unlike those in America, are organized around a variety of businesses. XiXi Mall has over 100 retail shops, 60 eateries, a karaoke bar, several children's play areas, and a cinema.
- 2) There is not a well-defined relationship between natural conservancy and commerce in the XiXi Complex. There are no community programs, visitor centers, or any general acknowledgment of the nearby wetlands from within the interior of the mall.
- 3) The mall is both a victim and a benefactor to its location. While it does contribute to traffic congestion and lacks community programs, it does bring a number of amenities to the area and greatly supports local development.

This led to a deeper discussion about the variety and role of shopping centers in both countries, as well as more general urban planning issues. We also shared a history of Cornell University and the Department of Design and Environmental Analysis with the ZJU students, so they could understand our approach and methods.



The team, Gosia, Bing, and Daniella, spotting a bit of America in XiXi Mall (Photo by Lu).



The team fielding questions after the final presentation (Photo by Bing).



SHANG



HAI 上海

Shanghai's financial district by day and night (Photos by Lauren).

Shanghai was and is the economic center of China because of its advantageous position at the mouth of the Yangtze River. In 2012, the total economic production of the city was approximately 2010 billion Chinese Yuan.

“The long bus ride from Hangzhou to Shanghai lulled most of us to sleep. When we opened our eyes, the landscape around us had totally changed; the lower buildings of Hangzhou were gone, as were the rolling hills of the countryside.

Shanghai loomed around us in every direction, and each massive skyscraper had its own style and personality to set it apart. This was the last city where our entire travel group was together. As people left for home or other destinations, we tried to stay together in smaller groups to experience all that this amazing international city has to offer.”

-BONNIE

“Shanghai is tall, vast, and sparkly. Yet even though it is a giant global city, with many skyscrapers, human scale and human presence is obvious. Everywhere one turns, there are little shops. People hang their clothing along any street. Despite the common feature of a rack outside of apartment windows, we saw underwear, quilts, and winter coats floating from any surface. A bridge railing contained numerous brightly patterned quilts. Multiple times I had to duck to avoid collision with someone’s jeans. I found these signs of human life comforting because without them, it was disconcerting to look up at a large set of skyscrapers and wonder if they were empty or occupied. I also enjoyed this mélange of clothing because it showed a certain level of what I can only presume is communal trust.”

-LAUREN

TONGJI UNIVERSITY

“Our final stop in China as an official research group was at Tongji University, an urban school that has renowned programs in urban planning, architecture, design and engineering among others. We visited the Design Innovation Department focuses on three key concepts: creation, innovation, and entrepreneurship. The department includes the Design Factory, where students learn to use high-tech equipment like extruders and 3D printers, and the Sino-Finnish Collaboration Center, which is the headquarters of Tongji’s partnership with Aalto University in Finland. Their collaborations with other schools and organizations form what Tongji calls a ‘cumulus’ of over 200 member institutions. One afternoon in the energetic, brightly-colored halls of Tongji University—most of which are adaptive reuse buildings within the urban environment—was enough to inspire all of us to embrace the school’s focus on fast-and-furious interdisciplinary style.



The Cornell research team, holding up All Design Magazine, with Tongji University staff and Dean of the Design Innovation Department (Photo by Tongji University student).

I was very tired when we arrived in Shanghai, but our visit to Tongji University reenergized me. Visiting the different buildings of the Design Innovation Department, we saw how the students balanced hard work—such as experimenting with new materials for a 3D printer—and fun—like baking cookies to celebrate it being Friday afternoon. Everywhere we looked, we saw the personality of the school and its staff and students. Headshots for final projects were not serious straight-on photos, but images of the students in motion, revealing their personalities.

Visiting a place like Tongji reminded me that fun, experimentation, and friendship can bring life and motivation into any journey. It was a real honor to spend the afternoon with staff and students, and exchange ideas for expanding the boundaries of interdisciplinary work.”

-BONNIE



Photo of Ethan, Lauren, and Bonnie in front of the Gubeikou section of the Great Wall of China (Photo by Beijing Hikers guide Deng Jun).

“My undergraduate degree is in Archaeology, and I am always moved by how it feels to actually interact with an ancient place instead of just looking at a photo of it. Being able to stand “face to face” with the wall, in an area where three different layers of material were exposed, brought all of the work of building it into perspective. We could look down the hillside and see brick factories in the valley below, for making the bricks of the wall, and beyond that we could see the towers of distant sections standing out against the forested skyline. After our descent from the wall, we played with puppies and learned to make dumplings in Gubeikou village, rounding out one of the most memorable days of my life.”

-BONNIE

“AFTER TOURING SHANGHAI for four days we took the high speed rail to Beijing. The high speed rail is one of the largest transportation systems in the world, and is far more innovative than any system in the US. Although it may be fast, hitting speeds of over 200MPH, it doesn’t feel faster than the average train.

Suzhou Street canal at the Summer Palace, Beijing (Photo by Bonnie).



Jing’s family lives in Beijing and was generous enough to host us for four days while we explored this ancient city. Our key destinations included glasses city, 798 Art District, the Forbidden city, the Great Wall, and the Summer Palace.

Glasses city was one of the most unbelievable places I have ever seen: room after room filled with glasses. While an average pair of prescription American glasses can cost \$500 and take weeks to make, these glasses cost \$50 and were done within hours. It was definitely

one of the most unique retail experiences I’ve ever had.

798 Art District was also a one-of-a-kind experience. Filled with restaurants, galleries, and shops, 798 is the hipster hot spot of China. The most interesting exhibit included paintings of what the artist described as “ideal beauty.” What was “ideal” to the artist was strange to us, as Americans: cartoonish versions of pouty-lipped young women that looked more like dolls than people. We enjoyed 798 so much that we spent a chilly Christmas Day hiding out in its cafes and galleries, discussing the art around us.

Our final destination was the Summer Palace, an imperial summer resort in Qing Dynasty. The Summer Palace offers beautiful views of the surrounding landscapes, lakes, and historic architecture. Although the winter may not be the ideal time to visit the Summer Palace, we were able to skate on the frozen lake and had a wonderful time.”

-ETHAN

ON COMING HOME

“For me, this trip was less about eye-opening experiences and more about showing my Cornell friends what my home country is like. It is a mixed feeling for me. It was great to travel with my classmates, but it was also the first time I flew to China without first stopping to visit my parents.

I grew up in China, so coming to North America was more of an eye-opening experience for me. I was very interested in how Chinese viewed China, versus North American’s view of China. This was a unique opportunity for me to be with a group of Americans and look at China through their eyes.

I had been to Hangzhou once before and I only had vague memories of the city. Even today, I still follow Chinese news: rapid development, pollution, and historical preservation are not new topics for me. It was very interesting, however, to actually have a conversation with the city planners and the decision makers. This was the first time I got into “urban planner” mode, and my newly developed skills from the DEA program have been prodding me to analyze China’s urban problems from a human-environment relations perspective.

What I did expect was the air pollution, and I actually felt a bit embarrassed letting Cornell friends see such a polluted country. Air pollution has surged to a level that is beyond control, especially in the past few years. Coming back to China on this trip does not necessarily make me miss the clean air in US, but gives me a stronger will to help China to solve its environmental and energy problems. For a country with 1.4 billion people, the path to sustainable development is difficult and long. This trip, however, gives me hope that we will achieve our most important goals.”

-JING

The team, plus Gosia, on one of the many bridges at West Lake, Hangzhou (Photo by Yana).



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Additional facts were compiled by the Cornell team based on notes taken throughout the trip.

COVER PHOTOGRAPHY

Top Row, Left to Right: A floating restaurant seat at West Lake, Hangzhou (Bonnie); Dragon ornament at Lingyin Temple (Yana)

Middle Row, Left to Right: A lesson in dumpling-making, Gubeikou Village (Ethan); Longjing tea plantation, Hangzhou (Lauren)

Bottom Row, Left to Right: Fruit trucks (Yana); Apartment windows, Shanghai (Lauren); Making new friends (Carolina)

THANK YOU to Professor Ying Hua, Professor Lei Xu, Professor Jack Elliott, and Professor Jing Wu, for organizing this trip and guiding us through our time in China. Thank you to the city governments and planning departments of Jiande and Hangzhou for meeting with us to discuss urban planning. Thank you to the staff of West Lake National Heritage Site for their presentation and introduction to this beautiful site. Thank you to the staff and students of Tongji University for an inspiring afternoon. And thank you to the Ge family for their generosity and hospitality while in Beijing.

SPECIAL THANKS to all of our new friends at ZJU: Bing, Andrea, Heather, Lu, Gosia, Daniella, Bolaj, and anyone else whose names might have slipped through our minds. We appreciate your friendship, hospitality, jokes, and explanations. We miss coffee and lunch with you, and look forward to our next visit!