**Explain your interest in Architecture in 200 words or less. Please be sure to upload ONLY the Final draft of your essay here (PDF preferred).**

“The water waves shone in aqua, the light pours down through the traditional-style railings…” It was a model we built with recycled materials for a complex on our campus. The waves were tailored from discarded Sprite bottles, and the buildings were made of used cardboard.

The complex was designed by a disciple of Ieoh Ming Pei. Inspiration coming from classical Chinese gardens, it not only reserves the slanting roofs and enclosed courtyards but also what I call “mooring in space.”

During my childhood, I liked to wander around Suzhou’s historic gardens. There’s one with a pond and a bridge at one end. While viewed from a certain angle, the pond extends beyond the bridge and into the bamboo forest. Everything then builds upon one another visually. When I look through a floral window or walk along an ambulatory, it gives a sense of infinity for the path winding into jungles.

I’d liken these multi-dimensional garden architectures to the polytopes I learned in mathematics - objects travel in four-dimension. Each part of the garden seems to be distinct and separate, but when viewed from the right angle, they become such a vibrant entirety. The parts travel, tangle, and scatter around. They interact in such a way that even the most advanced mathematical theory could hardly interpret. This architectural art goes far beyond the logic, turning mathematics from the rational to the perceptual, from the regular to the non-linear.

[word counts: 237]

**What do you hope to accomplish during the program? What do you hope to gain from this experience? [Please do not exceed 100 words]**

With the support of Penn’s faculty in architectural design, I’m confident in sharpening my creativity and finessing my aesthetic sense. By exploring hand drawings, digital models and photographs of physical models during studio session, I’ll develop my own portfolio. Through this program, I can also explore future career options and opportunities related to architect while experimenting with different techniques and design tools and profoundly studying my favorite post-modernist style.

Professional mentoring on design thinking, practical studio experience, creativity-sparking activities, and my own work exhibition at Penn’s art gallery are all on the list that I can’t wait to tick.

[word counts: 99]

**List any extracurricular activities (sports, arts, community service, after-school classes, workshops, school newspaper, yearbook): [2000 characters]**

**Architecture Design**, *Core Member*, 10th grade

* Built digital models, used 3D printing and laser-cutting to make components for physical models;
* Organized periodic workshops by inviting architects to talk about the concept and different schools of architectural design.

**SCUBA Diving**, *To-be Professional Diver*, 11th grade

* Carry out pool training and ocean diving to prepare for open water diver license certified by PADI;
* Devote time & energy to maintaining gears, refilling tanks, and raising funds for the outdoor program;
* Dive into the coastal ocean to collect marine biological samples for school’s seawater table.

**Coastal Biodiversity**, *Monitor*, 11th grade

* Created a topographic map to depict the biological distributions on Race Rocks Islands, logged the abiotic factors about the wind speed, direction, and time of the day;
* Observed plankton bloom under microscope, analyzed the food chain of marine organisms through field study.

**Astronomy**, *Member*, 11th grade

* Learn about astrophysical observatory, take astrophotography, watch documentaries, and research;
* Retrofit our school telescope with remote control and automatic functions under various climatic conditions.

**U-CODE Movement**, *Co-founder*, 10th grade

* Self-studied Python and peer-tutored programming through mini projects;
* Popularized girls’ coding education with bilingual teaching at local secondary schools; cultivated women’s self-confidence and challenge gender stereotype in STEM.

**Research on Cluster Algebra**, 11th grade

* Co-research Quasi-cluster Algebra of non-orientable surfaces with a Ph.D. candidate;
* Finished the proof on unistructurality of cluster algebras from Mobius stripe without punctures, and proved the number of triangulation on a Mobius stripe without punctures.

**Canada/USA Mathcamp**, 10th grade

* Studied college-level math and attended daily colloquia to discover new branches of math;
* Conducted a collaborative project on point-set topology and graph theory under the guidance of Mathcamp faculty.

**List any academic, community, or athletic honors or awards:**

* Meritorious Award, 22nd Annual High School Mathematical Contest in Modeling (HiMCM), 02/2020
* Honor Roll in BC, Canadian Open Mathematics Challenge, qualified for attending Canadian Mathematical Olympiad (CMO), 11/2019
* Top 5%, Euclid Contest, The CENTER for EDUCATION in MATHEMATICS and COMPUTING, University of Waterloo, 05/2019
* Second Prize, CHINA THINKS BIG National Final, 03/2019
* Third Prize, Columbia University Social Science Research Workshop, Columbia INCITE, 02/2019
* First Prize (China), Math League, qualified for US Final (at Stanford) and its Math Camp (co-held by the Departments of Mathematics of Princeton University, Columbia University, and Williams College), 2018
* Second Prize, Jiangsu Junior High School Mathematics Competition, 2017
* Second Place (Global Final), The Berkeley Mini Math Tournament (BmMT), 2017