Engineering Pasta Towers

Fall term’s Engineering Design Competition featured an edible building material: Pasta!

Teams constructed towers with dry pasta. They could use any type of pasta, and the towers ranged from round rigatoni beauties to tall, elegant lasagna sculptures. And there’s another catch: the towers had to have spaces for two small toy penguins to stand.

On the day of the competition, towers were tested for their ability to withstand force. They used an “Instron machine” to test the towers, which imposed increasing load on the towers. Some of the pasta towers burst with the force, making for an exciting minor pasta explosion.

The goal of the pasta towers was to reach a minimum of 20 Newtons of force, but many towers achieved taking hundreds of Newtons of force and some even hit over 2700.

Carol Hsu, an engineering professor who led the project, said “Watching the towers get crushed is always exciting,

especially when it is catastrophic! In this competition, the students were challenged to design towers capable of withstanding a specified range of loads. Every team rose to the challenge with their pasta towers. Their success was largely due to prototype testing. Great job!”

Tina Barsotti, another engineering professor, explained that the project was devised by the students themselves. “Really what we’re teaching is the engineering design process.”