A small fleet of autonomous robotic platforms, outfitted with custom planter boxes containing soybean plants, roams the gallery in search of optimal light conditions for plant growth. The robots’ movements are based on a phototropic control strategy, using sensors to track and follow sunlight intensity or to locate LED grow lights. However, individual robots can also be guided or distracted by flashlight beams aimed at their sensors. The soybean plants in this work were chosen for their significance for global food production and also because of their strong association with a hybridity between nature and technology - in this case as a result of biotechnological strategies for increasing crop yields through genetic modification.

As self-pollinating organisms—paired with a light-seeking mobile platform, they also metaphorically address increasingly independent botanical/technological hybrids. Gardens merit attention as locations where art and technology produce material realities and social narratives with political consequences. Soybots belongs to a longer investigation of gardens as sites for critical reflection that started with the National Security Garden public artwork (http://www.gardensandmachines.com/NSG_Singen). The artists see this work as a speculative installation that suggests questions about agricultural and robotic futures implicated in contemporary practices and values. Specifically, the project attempts to translate and interpret what plants need into code that drives the behavior of the robots.

While roaming through architectural space, each robot transmits both sensor data and positional coordinates to a visualization window in the gallery. The upper half of the window plots positional data in real-time as lines: dense in areas of high light levels and sparse in darker areas. This part of the visualization connects architectural space to movement and light, while the lower part of the window displays statistical information, comparing average light values and distance traveled at the end of each day. Making this interface visible to visitors inspires thought about energy need, consumption and balance - comparing forms of sun and electrical energy. As one observer of the work has remarked this graphical representation also suggests that ‘the process of photosynthesis is more deeply entangled with technology and cultural-based ecologies than perhaps previously imagined. Rather than being simply a translation of light into plant matter, photosynthesis extends through food webs to include the relationship between humans and technology.’

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