

City of Surrey - The BioPod Initiative

As the second largest city in BC, and one of the fastest growing in Canada, the City of Surrey is often looking forward – identifying how to develop a strong vibrant economy that rewards entrepreneurship and creates jobs, while also looking back; never forgetting its history as an agricultural community. With one third of the city's land reserved for agricultural use under provincial legislation, the City of Surrey is finding the way to balance urbanization and development with modern agriculture. With a demand for housing, the high cost of land, and high labour costs the farming sector, traditional agriculture is under threat and modernizing is the key to ensuring this sector remains a major piece of Surrey's economy.

In answer to these challenges, the City's Economic Development Division worked to find like-minded partners in the private sector and academia to support a concept that would recognize the shifting market conditions that are challenging the agricultural industry. Under the City's leadership, the idea of a BioPod was conceived; two twin greenhouses that would be the testing ground for new technologies developed by provincial universities. By building the greenhouses at the John Volken Academy's Urban Campus, the BioPod also offered the opportunity to train the Academy's addiction recover students in greenhouse management systems, providing them with the opportunity receive University of the Fraser Valley training that could be applied to the agricultural industry and producing food that could be sold at the Academy's grocery store.

Innovation is at the core of the BioPod initiative; from impacting partnerships formed, to the projects being developed, and the training of future workers in the agricultural sector. The BioPod Initiative represents a rare opportunity where over 5 post-secondary institutions have united together with industry to solve complex challenges that are having an impact on farming in the Lower Mainland. The most significant innovation is the City's approach to bringing together industry, academia, and government to solve a land utilization issue by supporting the development of game-changing agri-innovations that lead to affordability and efficiencies in farming. The BioPod is also leveraging the expertise of its partners to provide the skills training component necessary to increase the provincial labour pool of qualified greenhouse operators in the region. Other local non-profit agencies have also approached our partnership to explore similar arrangements for their own clients.

The BioPod Initiative is designed to be scalable at both the current location where more 'Pods' could be deployed, and also elsewhere in BC, and Canada. This is due to the methodology and framework that our partnership has established and the ability for construction economies of scale to be realized in future projects, which could significantly reduce infrastructure costs. Furthermore, as the BioPod generates crops that could be sold or consumed, under the greenhouses current configuration, over \$2,000 worth of produce is generated for sale each month which helps offset operational expenses. UBC has already expressed interest replicating the program at their Okanagan campus as this model lends itself well to the development, testing, and demonstration of technologies unique to the arid Central Interior BC Region.

The BioPod, in its first 6 months of operation, can point to several accomplishments. In addition to the Memorandum of Understanding between 5 leading academic institutions, the BioPod to date has enlisted 4 students that are currently receiving horticultural skills training for a Statement of Completion through the tutelage of a UFV L.B. Plant and Biosciences PhD Researcher and Consultant. The program

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will look to graduate 4 students every 9 months, the length of a greenhouse growing season, while also providing workshop opportunities for 10-12 students in a variety of different classes that include commercial flower growing, basic gardening and food production.

The John Volken Academy students, with University of the Fraser Valley oversight, have planted and harvested over 8 different food crops that have primarily fed the students. The Fall/Winter Season will see the introduction of 5 new crops that traditionally perform well in colder, darker climates. Through the use of the vertical tower growing systems, the students were able to produce 121 pounds of strawberries this year in the BioPod. Over 200 kilos of green beans and over 180 kilos of tomatoes were grown at the BioPod that were used in everything from salads to pasta sauces. In addition to testing the technology of the vertical growing systems, the BioPod has also tested the translucent and diffuser films that absorb more energy with similar quality sunlight to produce healthier more vigorous plants with higher yields. The BioPod will see the testing of 3 more technologies in 2017.

The BioPod is just one way the City of Surrey is looking to evolve an agricultural sector that was once the backbone to the City's economy. By creating new opportunities that look to address not just regional issues related to agricultural land use, but larger scale problems associated to global food security and the technologies necessary to feed a growing population, the City and its partners are leading the way cities rethink economic development and innovation.