BUILD SOLUTIONS

EVALUATION QUESTIONNAIRE FOR ONE-YEAR PROGRAMME

CONTENTS

1 – FOREWORD

Building Urban Intelligent Living Design Solutions

Cities currently host more than half of the world population, which is projected to increase up to 70% by 2050 (UN, 2014). Already, cities account for 70% of global CO2 emissions (C40). With the expected population growth, cities would hence be the source of an estimated 85% of global GHG emissions.

There is a growing recognition and awareness that nature can help to provide viable solutions by using and deploying the properties of natural ecosystems and the services that they provide in a smart and 'engineered' way (EC). These living solutions provide sustainable, cost-effective, multi-purpose and flexible alternatives for various objectives. Working with nature, rather than against it, can further pave the way towards a more resource efficient, competitive and greener economy. It can also help to create new jobs and economic growth, through the manufacture and delivery of new products and services, which enhance the natural capital rather than deplete it (EC).

With that in mind, the big question is, why are nature-based solutions not used more to address the global urban challenges?

The main answer would be that there's a distinct skill and financing gap in the biotechnology sector. While we currently have great researchers in biotechnology, too often the commercialization and hence the implementation of their discoveries stumble due to a lack of personal experience in entrepreneurship and cooperation with industry leaders (Fritsch, 2010).

And even when most of those skills are present in a team attempting to commercialize a technology, another obstacle rears its head: the lack of short-term funding available to biotech start-ups and spinoffs (Swamidass, 2008). Recently, the High-Level Group for the European Innovation Council published their first recommendations which state that funding for disruptive, market-creating start-ups with deep-tech solutions (like biotech) is severely fragmented and doesn't meet the needs of the start-ups for developing the technology[1]. The lack of funding can be attributed to multiple factors, chief amongst them being the perceived risk and the huge capital expenditures necessary to develop sound biotechnology solutions.

Building Urban Intelligent Living Design Solutions (BUILD Solutions) project aims to set up transdisciplinary cooperation among universities and business, engaging students, teachers and researchers and providing them with the necessary entrepreneurial skills and connections to bring intelligent living solutions

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[1] http://ec.europa.eu/research/eic/pdf/eic_recommendations_set-1_2017.pdf

to the market, by investigating biological systems, creating smart design prototypes, business plans, plans for start-ups and working with accelerators.

The project's objective is to develop an experimental transdisciplinary educational system linking biology, intelligent design and business through several kinds of activities, such as courses for students and trainers, symposiums, development of educational resources, the set-up of an accelerator programme, launching an international call for ideas and creating new networks.

The project is co-funded by the Erasmus+ Programme of the European Union.

Living design solutions provide sustainable, cost-effective, multi-purpose and flexible alternatives for several urban challenges.

2 – INTRODUCTION

The One-Year Programme is one of the key transversal activities of the BUILDs project. Its main objective is to develop a new innovative and multidisciplinary approach to teaching and learning to merge the fields of biology, architecture, and business with the aim of exploring and introducing to the market intelligent living solutions that address global urban challenges.

To achieve this, we have put together trainers and researchers with business specialists and coaching experts in order to develop the content, structure, and tools of the One-Year Academic Programme that aimed at being multidisciplinary, fully interconnected, and that incorporates a business mindset. On the other hand, the actual activities of the One-Year Programme have been structured using the learning-by-doing methodology where students developed their projects by testing biology concepts, fabricating prototypes, and simulating performances on the market, while being coached by trainers of the three different disciplines as well as by business specialists.

The BUILDs One-Year Programme took place during the academic year 2019-2020, where a total of 30 students (10 students from each discipline of biology, design and business) have worked together with the support of their trainers and coaching experts.

The second part of the One-Year Programme started in the second semester (Jan-Jun 2020) with the 5-Day Workshop in January.

This document firstly introduces the One-Year Programme, describes evaluation methodology, presents one-year programme structure and evaluation questionnaires that we have done to support the improvement of the one-year programme. Secondly, presents the 5-Day Workshop structure and evaluation questionnaires for the students and trainers.

2.1 Evaluation methodology

In order to evaluate the success and impact of the One-Year graduate programme we will carry out a survey which includes a mix of qualitative and quantitative feedback to evaluate the success and impact of the educational programme. We will use Mentimeter software, a user-friendly survey platform, to engage with the audience.

The evaluation of all educational activities will include analysis of:

- the effectiveness of the workshops/learning programme including its reach of the target audience
- the impact of the programme on students understanding about Biotech, Intelligent Living Design and Eco-business methods

- the entrepreneurial skills, competencies and dispositions gained during the programmes
- the application of the knowledge and skills gained
- the strengths and weaknesses of the education approach used
- recommendations for changes to the programme so the programme may be implemented in new courses.

3 – ONE-YEAR PROGRAMME STRUCTURE

For this programme, IAAC selected 10 students participating in the Master in Advanced Architecture (MAA 01). UL selected 10 students participating in the Master in Environmental Sciences and Engineering (qualified graduate engineer equivalent to master 2 level) at the Graduate School for Agronomy and Food Industry (École Nationale Supérieure d'Agronomie et des Industries Alimentaires of Nancy - ENSAIA). WU also selected 10 students participating in the interuniversity course "Sustainability Challenge". The selection of these students was based in their CV, motivation letter and academic results.

The aim of the programme was to experiment with trans-disciplinary approaches to knowledge production, bringing together architecture, biology, environmental, technology, and business experts and graduate students to design, test and implement a new educational programme on entrepreneurship & design for urban re-naturalisation and resilience.

The educational programme ran using a "passing on the baton" strategy. First biology teachers, researchers and students developed scientific concepts and case studies that were further transferred to architecture and business students, so they applied them to the urban arena. With the support of teachers and companies, students built prototypes of an urban element or nature-based solution (i.e. a façade element, a learning ecosystem playground for public space, a furniture to clean the air, etc.) and creating a business plans for their prototypes.

Five teams having 2 students from each discipline were created, and they worked together for one semester. The whole programme has given the floor to students to unleash their talents, thus enhancing their employability prospects.

3.1 Evaluation Questionnaire for One-Year Programme

Q1- What is your profile?
- UL student
- IAAC student
- WU student

Q2- What words come to your mind that explain, summarize or symbolize the final result of the Semester Student Programme?
- Open question

Q3- In terms of your future professional career, how useful did you find the Semester Student Programme?
- Very useful
- Useful
- Interesting, but not that helpful
- Not very useful

Q4- How would you rate your overall learning experience?
- Excellent
- Good
- Neutral
- Poor

Q5- Rate the quality of the content throughout the semester programme?
- Excellent
- Good
- Neutral

Q6- What content did you liked, or there was something do you needed and we did not provide?
- Open question

Q7- How engaging would you say the overall content was?
- Very engaging

- Engaging most of the time
- It could be improved
- Not engaging

Q8- In what part of the semester programme did you feel more engaged?
- Open question

Q9- How would you rate your experience with the trainers?
- Very good and effective
- Sufficient
- Fair, it can be improved

If you reply fair- How should be improved or done differently?
- Open question

Q10- In relation to mentors, how would you rate the quality of the support and input given?
- Very good and effective
- Sufficient
- Fair, it can be improved

If you reply fair- How should be improved or done differently?
- Open question

Q11- In relation to mentorship, how would you rate the time devoted to it?
- Very good, it filled my expectations
- Sufficient, in view of the busy schedule of our mentor
- Fair, it can be improved

If you reply fair- How should be improved or done differently?
- Open question

Q12- Evaluate from 1-5 how your entrepreneurial knowledge or skills have improved by taking this semester programme
- Not improved
- Strongly improved

Q13- Would you consider further training on this topic on your own?

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- Yes

- No

Q14- Indicate your level of agreement to the following statements
(1=I strongly disagree, 5=I strongly agree).
The semester programme I attended:

- Enhanced my ability to identify opportunities.

- Enhanced my ability to develop networks.

- Enhanced my practical management skills in order to start a business.

- Increased my understanding of the actions someone has to take to start the business.

- Increased my understanding of the attitudes, values and motivations of entrepreneurs.

Q15- Indicate your level of agreement to the following statement
(1=I strongly disagree, 5=I strongly agree):

- I have the strong intention to start a firm someday.

Q16- Rate the entrepreneurial skills you acquired or improved during the program?
(Spider web graph).

- Persuasion

- Leadership

- Personal accountability

- Goal orientation

- Analytical problem solving

- Empathy

- Planning and Organising

- Self-management

- Risk-taking mentality

- Teamwork

Q17- Rate your group in terms of the entrepreneurial skills below (spider web graph)

- Persuasion

- Leadership

- Personal accountability

- Goal orientation
- Analytical problem solving
- Empathy
- Planning and Organising
- Self-management
- Risk-taking mentality
- Teamwork

Q18- How would you describe your team progress during the semester programme?
- Open question

Q19- Among the entrepreneurial skills below which ones you feel need more specific training?
- Persuasion
- Leadership
- Personal accountability
- Goal orientation
- Analytical problem solving
- Empathy
- Planning and Organising
- Self-management
- Risk-taking mentality
- Teamwork

Q20- Rate yourself in terms of the interdisciplinary skills you gain during the semester programme (Spider web graph)
- Collaborative work with people coming from different disciplinary backgrounds
- Communicate clear and effectively your technical and/or scientific knowledge
- Increase awareness on how to engage with others
- Understand other disciplinary methods and vocabulary
- Increase interest and curiosity in other disciplines

Q21- From 1-5 How ready do you feel to bring biotechnology & architectural design solutions to the market?

- Not ready- I feel ready

Q22- Would you recommend this programme to other students?

- Yes
- No

If you no- please reply why?

- Open question

Q23- Did the COVID-19 Pandemia have an impact on your work for the BUILD Solutions project? If yes, please explain why/how

- Open question

Q24- Could you suggest any improvements?

- Open question

Q25- Any overall comments, feedback, or suggestions?

- Open question

4 – 5-DAY WORKSHOP STRUCTURE

The 5-Day Workshop is an important activity within the One-Year Programme. It took place on the 13th through the 17th of January 2020 in Barcelona, Spain. The workshop was organized and developed by the Institute for Advanced Architecture of Catalonia, Université de Lorraine, Vienna University of Economics and Business, ERSILIA Foundation, ECONICK, Plant-e, City facilitators, BloxHub, and GreenTech Challenge.

The purpose of the five-day workshop was to give the students the chance to get to know each other in person and to learn directly from experts in biotech, living intelligent design, and eco business. They also benefited from developing soft skills and competences in their ability to work in an international environment, understanding other cultures, improving their international profile, and growing a networks of peers – which is an important aspect for any professional profile.

It encourages students to work on biological research with the aim of applying it in urban areas, eventually building a prototype of an urban living element. The workshop draws upon students and teachers from WU, UL, and IAAC. This allowed a wide range of disciplines to be mobilized as students who study biology, business, and architecture transfer their knowledge to each other.

4.1 Evaluation Questionnaires for 5-Day Workshop for students

Q1 - How useful did you find the 5 day workshop in Barcelona?
- Very useful
- Useful
- Neutral
- Interesting, but not that helpful
- Not very useful

Q2 – What words come to your mind that explain, summarize and symbolize the final result of the 5-Day Workshop?

Q3 – Evaluate from 1-5 the activities from the last 5 days (very unhelpful being 1, very helpful being 5):

- Team building

- 3 Hubspots (Architecture: Super Illa, Biology: Ciutadella Park, Business: IAAC)
- Team forming
- Individual start-up work sessions
- Final Presentation

Q4 – Evaluate from 1-5 the team building before the group consolidation: (very unhelpful being 1, very helpful being 5)

Q5 –– Evaluate from 1-5 the team building after the start-ups were fixed: (very unhelpful being 1, very helpful being 5)

Q6 – Evaluate from 1-5 the following Hubspots (very unhelpful being 1, very helpful being 5):

- Architecture: Super Illa
- Biology: Ciutadella Park
- Business: IAAC

Q7 – Any other comments about 3 hubspots?

Q8 – Evaluate from 1-3 your business idea progress (little being 1, a lot being 5)

Q9 – How would you rate the overall experience?

- Excellent
- Good
- Neutral
- Poor

Q10 – Could you suggest us any improvement?

- Open question

Q11 – Which day did you enjoy the most?

- DAY 1 - INTRO TO BUILDs
- DAY 2 - GROUPS + EXPLORATION AND BEGINNING OF PRESSURE
- DAY 3 - HIGH PRESSURE DAY
- DAY 4 - SELF-MANAGEMENT + CELEBRATION

- Day 5 - DECOMPRESSION AND NEXT STEPS

Q12 – Did you face any of the following intercultural barriers in 5 days workshop in Barcelona?

- Language barriers
- Different value of time
- Negative stereotypes and prejudices
- Different way to express feelings and emotions
- I had stereotypes, prejudices myself
- No barriers
- Other

Q13 – Did you face any of the following interdisciplinary barriers in 5 days workshop in Barcelona?

- Lack of trust in your disciplinary knowledge or disrespect for what you know
- Many disciplinary terminologies that I did not know and that were not explained
- Disciplinary approaches that I did not know or did not know how to implement them
- No interdisciplinary barrier

Q14 – Any overall comments, feedback, or suggestions?

- Open question

Q15 – What is your profile?

- UL student
- IAAC student
- IAAC student

4.2 Evaluation Questionnaires for 5 Day-Workshop for trainers

Q1 - How useful did you find the 5-Day workshop in Barcelona?

- Very useful

- Useful
- Neutral
- Interesting, but not that helpful
- Not very useful

Q2 – What words come to your mind that explain, summarize, and symbolize the final results of the 5-Day workshop?

Q3 – Evaluate from 1-3 the activities from the last 5 days: (Unhelpful being 1, helpful being 3)

- Team building
- 3 Hubspots (Architecture: Super Illa, Biology: Ciutadella Park, Business: IAAC)
- Group formation
- Start-up work sessions
- Final Presentation

Q4 – Evaluate from 1-3 the team building before the group consolidation: (Unhelpful being 1, helpful being 3)

Q5 -– Evaluate from 1-3 the team building after the start-ups were fixed: (Unhelpful being 1, helpful being 3)

Q6 – Any comments or suggestions about team building activities?

- Open question

Q7 – Evaluate from 1-3 the following Hubspots: (Unhelpful being 1, helpful being 3)

- Architecture: Super Illa
- Biology: Ciutadella Park
- Business: IAAC

Q8 – Any comments of suggestions about the 3 Hubspots?

- Open question

Q9 – Do the students´ start-up ideas reflect a well-balanced relation among architecture design, bio-tech, and business?

- Open question

Q10 – Evaluate from 1-3 the following students' start-up ideas: (Well balanced and creative being 1, Not well balanced and creative being 3)

- Liefbric Respirevert (hospices, workspaces, private housing/student dorms)
- SQAIR (metro stations)
- Puri´3 (indoor green installation)
- EPICLAYARIEN (green walls)
- Worm generation (eliminating plastic waste)

Q11 – Any other comments about student's start-up ideas?

- Open question

Q12 – How would you rate the 5-Day workshop experience?
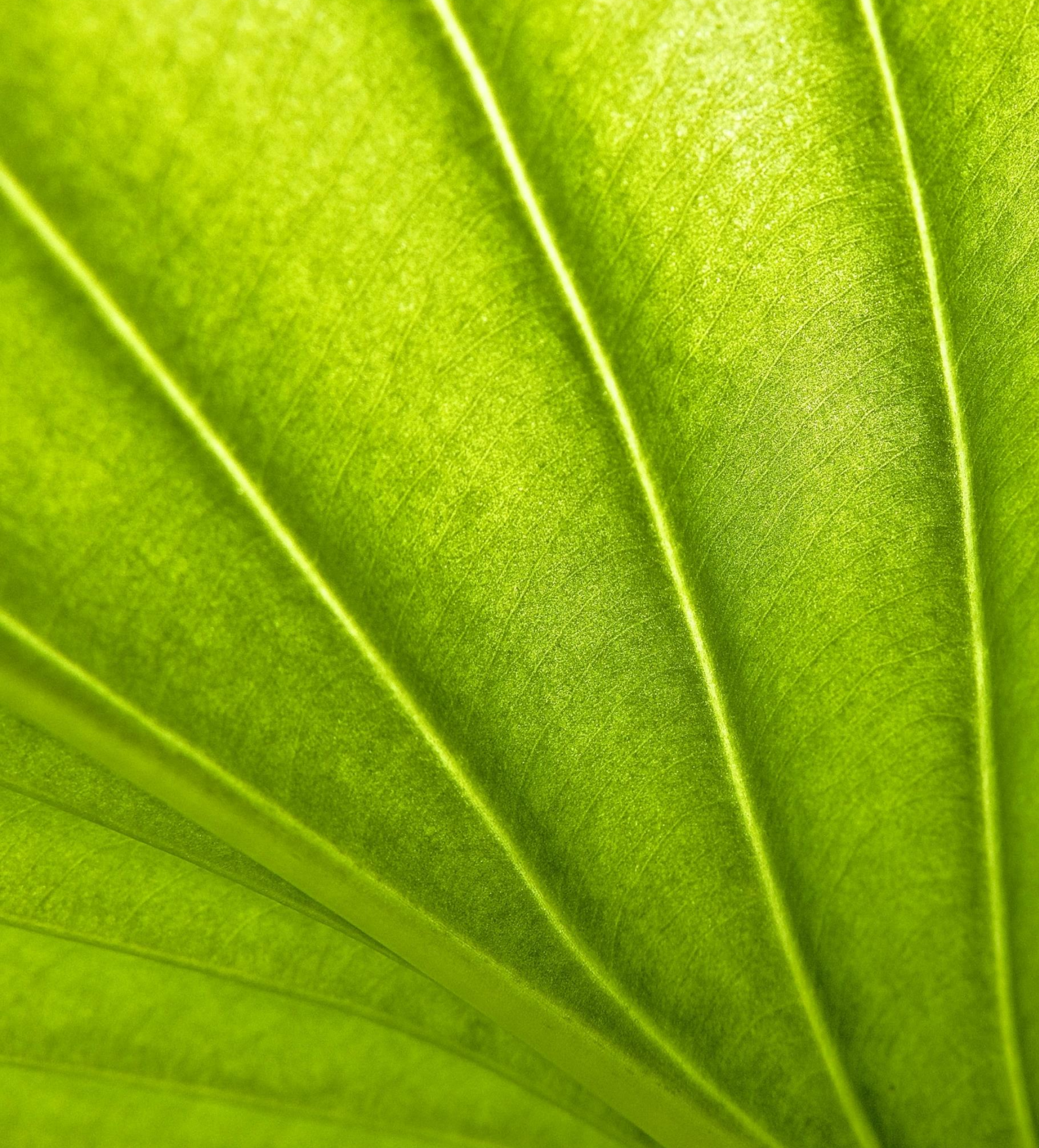
- Excellent
- Good
- Neutral
- Poor

Q13 – Any overall comments, feedback, or suggestions?

- Open question

Q14 – What is your profile?

- UL trainer
- WU trainer
- IAAC trainer
- Other