THE FAMAGUSTA ECOCITY

A New Path for Peace in Cyprus

Edited By

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Famagusta, photo by Kamiar Yazdani, 2009

For Roger Kelly

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CONTENTS

PREFACE

"We stand at a critical moment in Earth's history, a time when humanity must choose its future. As the world becomes increasingly interdependent and fragile, the future at once holds great peril and great promise. To move forward we must recognize that in the midst of a magnificent diversity of cultures and life forms we are one human family and one Earth community with a common destiny. We must join together to bring forth sustainable global society founded on respect for nature, universal human rights, economic justice, and a culture of peace. Towards this end, it is imperative that we, the peoples of Earth, declare our responsibility to one another, to the greater community of life, and to future generations."

-The Earth Charter

There was a children's toy that was molten in the presence of silence and desolation. Breakfast tables were set for the trapped souls of the 45-year-human-free section of the city. Another morning flashed by divided by barbed wires. Yet, people on the other side of the border, went about their everyday activities, eating, talking, sleeping and getting older…

A fragmented city, fragmented lives within a fragmented country! What would you choose: To watch idly from a distance, to wait for an ex machine Deus to intervene, or to take action?

This book is dedicated to those who chose to take action for a better life for all. It traces a road map not travelled by many along ecological paths that connect rather than segregate offering splendid vistas and bold visions to its readers. It is a book written by a group of people whose roots are intertwined yet, they only learned about the patterns of their lives incidentally. It is a guide for an ecopolis that does not stand far away.

The book presents eco-friendly peace practices, which may relieve the wounds of the city of Famagusta so that it can be entrusted as a healed and wholesome ecocity to future generations. There are many aspects of sustainable life that cannot be discussed without touching upon all others. However, it is impossible to cover every aspect of sustainability within a single book even though this book has tried to cover as extensive a ground as possible.

Therefore, this book offers a selection of thoughts, scientific statements, examples and design ideas regarding how an

integrated Famagusta will promote peaceful coexistence among all its inhabitants, embrace the latest sustainable and renewable technologies and attract high-quality, job-creating, commerce, tourism and investment. The book is organized in four parts:

In Part One, “The Place, its People and their Ordeals” three women are introduced. In Chapter one, Emily Markides shares her journey very much focused upon an ecocity vision for an integrated and peaceful Famagusta. Emily had to leave her hometown to become a refugee in 1974. In Chapter two, Ceren Boğaç who was born in Famagusta after 1974 and raised in a dwelling over-looking the abandoned district of the city, shares her experience of living an entire life with that memorial burden. In Chapter three, Vasia Markides talks about the Famagusta Ecocity Project and how the roads of these three women are intertwined along with the lives of so many others.

Part Two addresses “Time and Opportunities” offered by the ecocity team members. In Chapter four, Christina Elia asks what kind of a city we want to live in today by stressing contemporary urban problems. In Chapter five, Fiona Mullen, analyses the sustainable opportunities for businesses and foreign investment for the sake of a better environment.

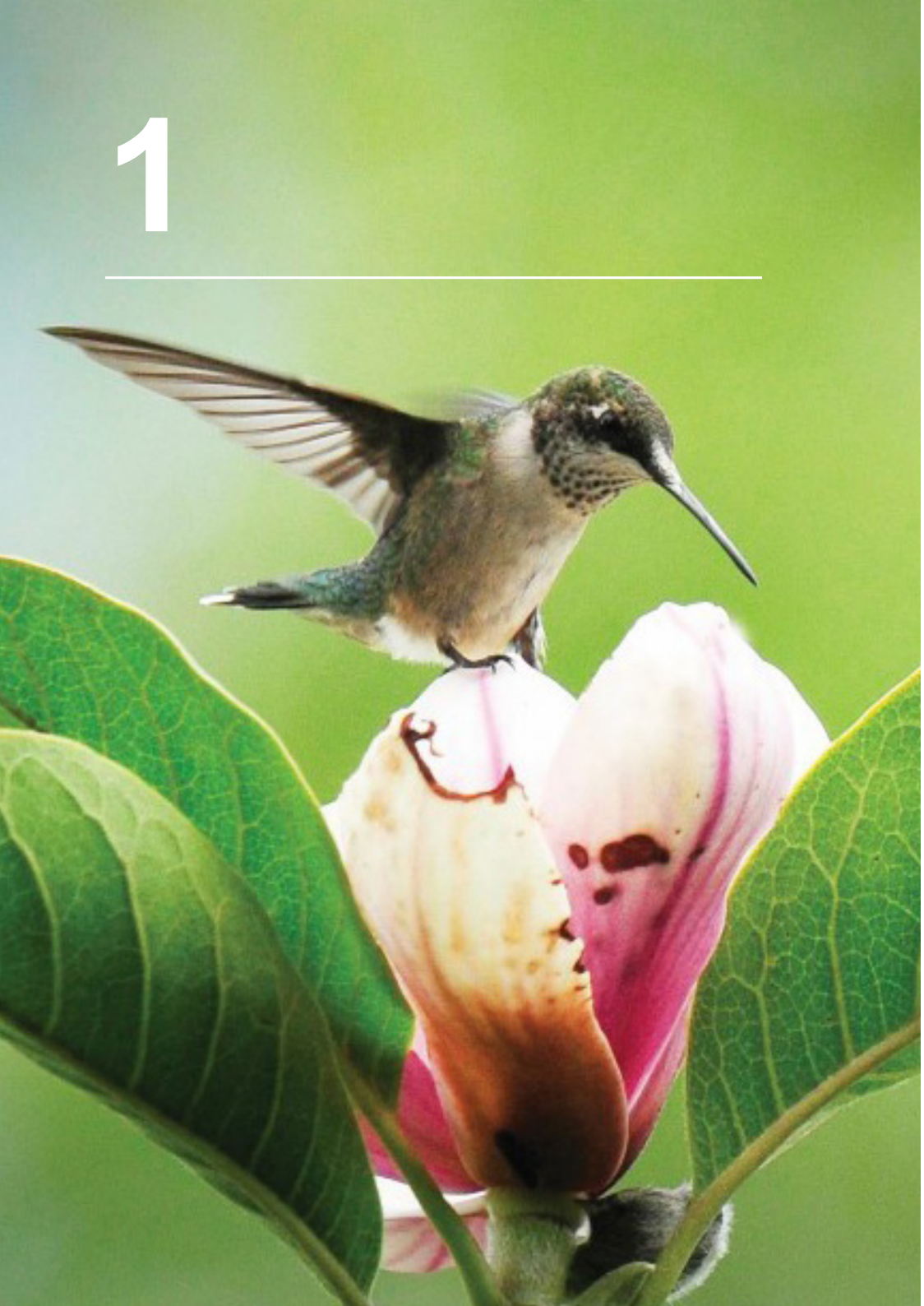
In Part Three, “Urban, Ecological Sustainability and its Challenges” are being discussed. In Chapter six, Roger Kelly reviews the consequences of climate change and its particular impact on Cyprus and Famagusta. In Chapter seven, Warren Haffar discusses the implications of a sustainable development model with a specific focus on peace-building processes and on conflict transformation. In Chapter eight, Ceren Boğaç and Polat Hançer identify eco-friendly building applications by stressing the reciprocal relationship between eco architecture and an ecocity framework. In Chapter nine, Armando Garma-Fernandez addresses the best, currently existent architectural applications of energy efficient, sustainable buildings.

In Part Four, “Design Proposals and Responses” are being introduced. In Chapter ten, Jan Wampler presents the Cyprus architectural design studio process and proposals of the Famagusta Ecocity Project. In Chapter eleven, Nektarios Christodoulou and Zoi Rossetou conclude on the beneficial influence of the project on the current status of ethnic relations in Cyprus and address responses and experiences of the bi-communal participants of the Cyprus architectural design studio.

We would like to thank Sheila Holtz, our outside editor, and everyone who supported this project having love for Famagusta in their heart as their true motif. We would also like to thank the project’s team, which has been tremendous having worked voluntarily -since day one- on this project. Thanks also goes to our esteemed professionals and scientists who contributed through many panel presentations and discussions; and last but not least to the valuable contributors who did not spare effort or time to make this book available to you in a timely manner.

Part One

The Place, its People and their Ordeals



Under the Willow Tree

Emily Markides

A Pivotal Year

1974 was perhaps the most consequential year of my life. It was the year that 'permaculture', a design for an exciting new holistic paradigm, was born; it was the year that Europe's foremost eco-demonstration site, the Centre for Alternative Technology (CAT), was created in Wales; and it was the year that I lost my home city to a military intervention.

In 1974, as Turkish troops parachuted into my native country of Cyprus, two Australians, Bill Mollison and David Holmgren, jointly evolved a system of holistic thinking based on self-reliance through ecological design. They named their design system 'permaculture', which implied a harmonious integration of landscape and people that provided food, energy, shelter, and other human needs in a sustainable way. This exciting concept was so reflective of the growing concern with ecological sustainability and maintaining ethical values -while simultaneously addressing care of the people and land- that it spread like brushfire to the four corners of the earth. As I was then quite young, inexperienced and newly married, I did not foresee the great impact that those three a-causal events would have on my life's journey.

The Cyprus Problem

In 1960 the Zurich agreements gave Cyprus its independence from Great Britain. Greece, Turkey, and Great Britain then became the three guarantor powers, each given the right to intervene in certain conditions of crisis in the young, independent Republic. Sadly, that fear of political collapse became a self-fulfilling prophecy, and the ensuing violence of 1963, led to pain and animosity between the two ethnic communities -the Greek Cypriots and the Turkish Cypriots. Most of the minority Turkish Cypriots -18% percent of the island's population- ended up living unhappy lives in enclaves, while the 80% majority Greek Cypriots enjoyed relative prosperity and comfort. I had no idea at the time that these long-standing power disparities, coupled with nationalism and religious fundamentalism and fueled by resentment, would cause the events of 1974.

My Journey

Unlike the tumultuous history of my small island, my personal odyssey was one of childhood innocence followed by youthful adventures, which included a multi-lingual education in the United

Kingdom, Europe and North America. The Greek-instigated coup d'etat of 1974, followed by the Turkish military intervention, forced themselves upon what was, until that fateful year, my joyous and carefree existence. At the time, I was enjoying, with my Cypriot husband, sociology professor and author, Kyriacos Markides, the discreet charm of American academic life, balancing teaching and scholarship with marriage and later on, motherhood.

En route back to Maine with my husband, after a year's sabbatical in Cyprus, we watched on television at Heathrow Airport, the Turkish tanks roll into the evacuated city of Famagusta while its Greek Cypriot inhabitants fled to the safety of the near-by British sovereign base of Dhekelia. The occupation and military take-over of my city, carried out by the modes of patriarchal politics -empire, control and domination- resulted in displacement from family, community and home, events that have marked decisively my life ever since.

Figure 01. Maine, 2017

A Change of Course

Our collective Cypriot experience -eight decades of British colonial rule followed by a new foreign intervention- left me with a sense of acute loss; I was a person with no place to call home. I had lost not only Famagusta and its adjacent ancient ruins of Salamis where as a youngster I play acted different roles from Greek tragedy, but also my father's village of Karpasi and Agios Philon in the Karpass

Peninsula, my summer haven. This loss left me paralyzed with fear of what the future might hold for us. The ensuing pain led me to change my academic focus from poetry and comparative literature to semiotics and deconstruction and then ultimately to peace studies and environmental studies. My grief became a catalyst for my subsequent stand against war, exploitation, injustice, nuclear power, pollution and the destruction of the earth community.

As my future path in permaculture, peace and reconciliation studies, and the ecovillage and ecocity movement became clear, I began to embrace earth democracy with its focus on local culture and the arts, human-scale sustainable communities, and an economics that elevated fairness and justice over profit and exploitation. This holistic convergence slowly gave birth to an ecocity vision for the ghost town of Varosha and the entire city of Famagusta.

A Vision for Famagusta

I began to envision an integrated city based on social equity with special focus on conservation and preservation of its cultural and natural environment, with an efficient transportation system, with community gardens for local food production, and with an infrastructure that made use of appropriate technologies. To turn such a vision into reality would require a multi-track approach to peace and sustainability with the active involvement of players previously excluded from governance such as women and youth. Working together across the divide, they could create a bi-communal Famagusta, serving as a blueprint for all troubled communities in the region and beyond.

Without my ancestral ground to root me, permaculture provided me with a new foundation and design for sustainable living. My acquaintance with CAT gave me an exemplary model of the ecovillage/ecocity movement. The existence of such a prototype made it possible to connect with a powerful network of like-minded individuals; these pioneers became my guides and collaborators in my effort to turn my city from a ghost town into an integrated and peaceful ecocity.

A Conversation Under the Willow Tree

July 28, 2006 was a beautiful summer day in the coastal Maine town of Rockland. A group of friends had gathered under the shade of a magnificent willow tree to celebrate my birthday. Everything in the

garden was in full bloom; there was a soft sound of insects buzzing and the smell of flowers and herbs mingled with the aroma of many sumptuous dishes served on a vast round table.

If there ever were an Eden on Earth, it must have resembled this pastoral scene of friends celebrating nature and community. This talented group consisted of women, gardeners, artists, ceramicists, designers, doctors, engineers, and university professors, along with some sensitive and enlightened men. We had come together to discuss personal development, world crises and the need to find solutions. This conversation would ultimately lead to an idea that would be life changing for many of us attending this celebratory event. It all started with a question.

Figure 02. The Willow Tree, 2016

The Question

“So do tell us, Emily, what is it that makes you work with such passion and dedication in creating sustainable communities and ecovillages?” The question took me by surprise. We had gathered for a celebration of life, a vibrant discussion, and good food, so I hardly expected to be questioned on the motives behind my life’s commitments by some of my dearest and closest friends. They should have been familiar with my commitment to finding

sustainable solutions for a planet in peril so I opted to offer nothing other than my usual refrain of simplistic explanations.

"I have lost my city to a military intervention, so wherever I find myself I try to recreate the experience of having lived in a sustainable and vibrant community."

My two permaculture mentors from Australia, Julia and Charles Yelton, didn't seem very impressed with my answer, nor did they accept my nonchalant and frivolous manner in tackling such a charged issue. Their next question frustrated me even more: "So what are you doing about it?"

Charles and Julia were confident in their questioning due to the exploratory method of permaculture design: it is not about stating the problem but about seeking solutions. As students of one of the fathers of permaculture, Bill Mollison, they had worked in a renowned permanent-agriculture site in one of the leading ecovillages in the world, Crystal Waters, Australia.

After meeting this couple during a talk I gave on energetic healers, I wondered how I might incorporate permaculture design into the courses that I taught at the University of Maine in Orono: "Building Sustainable Communities", "Permaculture and Earth Education", and "Ecovillages and Ecocities: Models of Global Restoration" I had come to realize that the practice of permaculture is an essential prerequisite to the creation of ecovillages and sustainable communities. My mind raced with ideas to take my students to Australia to teach them how to design sustainable settlements for humans but logistics made that difficult.

I was, however, able to harness some of those ideas and turn them into reality when I took my students to the Yelton's home in Whitefield, Maine, and then to Hawaii and Sicily where they became certified in permaculture design. So, being fond of them, as they seemed to be of me, I was completely taken by surprise by their annoying questioning, which implied that I should plunge into action to reclaim my city in captivity.

"What would you like me to do about a city occupied by Turkish troops that forcibly took over one third of Cyprus in 1974, including my home town of Famagusta?"

I responded with a tone of exasperation. I then tried to calm myself by offering what I thought was a somewhat better explanation:

"The loss of my city has caused me the greatest pain that I have ever experienced. The injustice of it deeply affected my every action ever since; but in spite of all the grief I feel whenever I bring Famagusta to mind, there is nothing I can do about it. Am I right to assume that you are implying I take action against Turkey, one of the most powerful military forces in the world?"

Such woeful grievances on my part are usually met with concern, comfort and empathy. I had never before been confronted by such a seemingly personal assault as that which came from my two permaculture mentors on that fateful day. Charles and Julia were neither deterred by my frustrated reaction nor were they about to let me play the victim card so easily.

"Emily, we are not asking you to tell us how you feel about the loss of Famagusta but rather that you tell us what you plan to do about it",

they stated emphatically, and then continued by asking a pivotal question that would forever change my life:

"Do tell us, what is your plan of action to reclaim your city?"

I was completely baffled by their persistence and annoyed by their seemingly outrageous comment, which implied that I should plunge into action to reclaim my city. Since 1974, Famagusta had been pillaged, abandoned, fenced off, barricaded and guarded by the Turkish military -the only city of Europe to have been so blatantly ignored with no success in reaching a resolution to this social injustice and violation of human rights. It was hurtful enough to be an exiled citizen watching my city decay over the course of more than four decades due to an unresolved political conflict. The last thing that I needed was a guilt trip imposed on me by friends because of my inaction.

Having lived through the coup d'etat and the military take-over of my country, I played host to an inordinate amount of fear; it had enslaved my mind and had manifested in every dream I had for

years after 1974. War and conflict had claimed not only the lives of so many innocent people, but also their homes and communities on both sides of the divide, and I felt the reverberations of this tragedy from across the Atlantic. This momentous crisis prevented me from thinking or acting clearly. Thanks to their uncompromising questioning, however, I began to get glimpses of the important challenge at hand. Charles and Julia, like true Zen masters, were not content to allow me to wallow in misery and self-pity.

Figure 03. Famagusta, 2014

I had no idea at the time that their probing and questioning would be my first real lesson in permaculture -and what, I suppose, Immnauel Kant must have meant when he spoke of the need of a 'categorical imperative'- an absolute and unconditional requirement for action, irrespective of any results, in the face of all adversity.

Epiphany

Under that magnificent willow tree, in a small rural town in Maine, I suddenly knew what I had to do:

"I am going to do everything in my power to turn Famagusta from a necropolis into an ecopolis."

The thought of assisting with the revitalization of my hometown must have lurked at the back of my mind for a long time but it now came to full consciousness with an absolute clarity of purpose and an urgent action plan. Why did I not act on it before? That remained a great mystery. But timing is everything and it felt as if that was the right time to act in turning Famagusta from ghost town into a restored and integrated bi-communal ecocity.

> *"I will submit my proposal to two most powerful and influential political bodies, the United Nations (UN) and the European Union (EU); they are both interested in resolving the political impasse of Cyprus."*

Giving expression finally to this idea and releasing it from my subconscious was one of the most sublime moments of my life; it created an excitement and an anticipation that I had never felt before.

With a mischievous smile and a look of approval, Charles gave me my next assignment:

> *"First you need to send your proposal to everyone who is here under this willow tree so that we can all give you feedback and advice. We promise to help you reclaim your city and turn it into Europe's foremost ecocity. What Julia and I will do next is to put your intention into our Field Broadcaster and emanate these good vibrations out into the cosmos. The Field Broadcaster."*

Charles went on to inform me,

> *"is an energy device, used by quantum agriculturists to take advantage of the surplus flow of electrons constantly moving up and down in the soil. This simple contraction broadcasts patterns of intention placed in the pipe, acting as a universal transmission rod."*

My wise friends from Australia were very committed to nontraditional ways of thinking, behaving and applying theory, to put it mildly. Not only were Charles and Julia advanced in the practice of permaculture but they were also well versed in Masanobu Fukuoka's natural farming methods. Fukuoka was a

Figure 04. Reaching Across the Fence, 2004

pioneer in natural farming practices that revitalize lands plagued by ecological problems -most notably desertification- and in the biodynamic farming methods proposed by Rudolf Steiner, plus in many other energetic practices.

With the promised support of my friends and the alleged power of the Field Broadcaster in emanating the energy of my intention, I overcame the paralysis of fear and plunged into a new path, seeing for the first time the possibility of a meaningful solution. I was no longer giving in to the inevitable consequences of the politics of empire, but rather making the choice to take the hard road, to learn and develop a new avenue for peace and ecological sustainability for Famagusta.

Taking the First Step

Within 48 hours of that fateful July day of 2006, I had sent my proposal to my supportive friends. With their positive response, the draft version of the Famagusta ecocity proposal was ready to be sent out to the two powerful political bodies, the Unite Nations and the European Union.

Despite all the excitement, I felt a lurking suspicion that all the talk about a Field Broadcaster was nothing more than a hocus pocus. I again feared that this task was far over my head and therefore impossible to achieve, which in many ways provided me with a sense of relief. As I observed this sensation and traced its origins, I realized that there is nothing more reassuring than remaining stuck in one's comfort zone, on the familiar and easy path. The mere thought of change felt threatening.

A Serendipitous Call

The events that followed dispelled all doubts and discomfort. Before I even put the proposal into the mailbox, I received a phone call -as if straight out of the Field Broadcaster- from a friend, Elaine Valdov, who was involved with the United Nations. She asked me if I could give a talk at the UN Youth Assembly on the importance of ecovillages as models of sustainable living and learning.

As this project gained more and more supporters, I became aware that the gifts of our daughter Vasia, in videography and social media savvy were essential in its promotion. Vasia was working at the time on her Masters' degree from Tufts University -the School of the Museum of Fine Arts in Boston. She decided to create a

video about Famagusta, highlighting the history, the desolation, and the hope for its future. Her movie “Hidden in the Sand” -a literal translation of “Famagusta” -and her role in launching the Ecocity Project would in fact become the major catalyst in igniting motivation and awareness, and in raising funding for this project, across the world.

My visit to the Third Annual UN Youth Assembly in August of 2006 presented me with the opportunity to articulate my ambitious vision -of Famagusta as Europe’s first ecocity- to an audience of responsive, hopeful and idealistic youngsters - see Appendix A.

Evan Thomas, who attended the same UN panel, came to see me at the end of our presentations. He asked if he could forward the ‘ecocity proposal’ along with my contact information to Bernard Amadei, Professor of Civil Engineering at Colorado University -Boulder, founder of Engineers Without Borders (EWB) in the USA, and co-founder of EWB-International.

Only a few days after my visit to the UN an email came from Bernard Amadei expressing his interest in community development and peace initiatives and his desire to meet with me to discuss the proposal on the reconstruction and restoration of Famagusta.

The Anson Idealists

Two months had hardly passed since the idea of presenting the ecocity proposal to the UN and EU was hatched, when an amazing international group began gathering force around this concept demanding an immediate action plan. The “Anson idealists”, as this group came to be known, gathered during a cold December weekend in Maine. We perceived the advantages of a peaceful Cyprus in the troubled region of the Middle East and decided that it should become a model of ecology and peace for other conflict areas around the world.

Everyone present agreed that the conflict in Cyprus presented major political challenges but the group’s intentions were unwavering. Our proposed plan was to:

1) Transform Cyprus into a beacon of peace for the troubled region of the Middle East, and

2) Assist in the reconstruction of Famagusta as a sustainable and resilient community that reduces its wastes and focuses on energy conservation, environmental restoration and, in particular, the use of appropriate technologies.

Figure 05. Famagusta, 2018

The Group's Aims

Reaching common ground between the two ethnic communities on the island seemed paramount. If Cyprus were to resolve its conflict peacefully, it would have positive reverberations on its neighboring countries, since the island is situated at the strategic crossroads of three continents, Europe, Asia and Africa. If there were ever to be a sustainable and peaceful coexistence, Famagusta, everyone agreed, must become the laboratory for a sustainable community development model of ecopeace education. The group hoped to accomplish the following:

- Promote a culture of peace for the island as a whole with a special focus on Famagusta through social and ecological engagement, meaningful dialogue and active partnership in community projects;
- Honor the cultural and natural diversity of Cyprus and Famagusta through a long-term systemic approach to peaceful co-existence with each other and the earth;
- Reach common ground by nurturing and cultivating rituals that respect the traditions of both ethnic groups;
- Commit to a long-term vision through creativity, the arts, and the active participation of women and youth both of whom were previously excluded from political processes;
- Eradicate economic injustice and restore democracy, human rights, gender balance and respect for cultural, natural, and religious diversity for present and future generations.

Figure 06. Waking Famagusta Video Still, 2014

The Next Stage

The journey towards promoting a peace and sustainability solution for Cyprus in general by focusing on Famagusta began with the retreat at Anson and continued with a firm commitment on the part of everyone to engage in concrete steps to implementing the above goals and aims. In reality, it took almost a decade before enough momentum would gather to begin the process of implementation of the vision and mission of the ecocity proposal.

Julia, Charles and I made a commitment to go to Cyprus in early 2007 to identify a possible site from which to start planning the Famagusta activities. The site found was a Detoxification Center in the mountainous region of Filani. That is where the first seeds were planted that would eventually grow to form an edible forest and a network of local and international supporters.

A Rich and Variegated Tapestry

The ecocity vision for Famagusta is an ongoing tapestry stretching out from the island to the surrounding continents. The weaving of local culture, the arts, and appropriate technologies into its fabric is dependent upon an organic design, interconnecting diverse intentions into a universal sustainable thread. This implies the rejection of chemicals for people and the land with a major focus put on its citizens' health and spiritual well-being as an on-going feature of every aspect of life, while at the same time focusing on land and nature stewardship through environmental education. Ultimately, this collaborative construction seeks to join like-minded people across the globe, cementing deep ties of friendship and networking, obliterating the causes of war and destruction.

On this rich and variegated life journey, I have learned through experience that turning away from fear, frustration and anger as the inevitable consequences of the politics of empire results in a politics of understanding, empathy and compassion within the context of a growing new earth community. This integration of opposites -culture/nature and economy/ecology- is a move from the global megacity of the past into a new paradigm -the ecocity as a prerequisite for a sustainable and peaceful future.

Appendix A: Famagusta Draft Proposal: Turning Varosha into an Ecopeace City

Respectfully Submitted to the UN and EU
in September, 2006
By the International Ecopeace Community
ESTIA's President, Dr. Emily Markides

During the Turkish invasion of Cyprus in 1974, six square kilometers of Famagusta, one of the island's most important harbors, tourist destinations, and a center of trade and commerce, was captured by the Turkish military and was fenced off from the rest of the island by barbed wire. Varosha, as it is otherwise known, remains a city in captivity, an abandoned, derelict ghost town that has become a pawn in the political struggle that continues unresolved, to this day. This proposal offers the possibility to eradicate the plight of Famagusta, a modern European anachronism, by means of its return to the legal citizens to which it belongs, with the understanding that it adopts certain recommendations, as spelt out below:

1. That Famagusta is restored as a green belt and a model ecopeace city that fulfills the needs of all communities on the island, including that of the natural environment, both during our generation and of generations to come.

2. That Famagusta offer new possibilities for a self-reliant and sustainable local community, emphasizing alternative building technologies; rainwater harvesting; energy efficient rooftops; solar, wind and hydro energy; and architectural spaces and landscapes that integrate permaculture practices (a design science that uses the patterns of nature).

3. That Famagusta represent empowerment and responsibility through a process of restoration and conservation; sustainable economic development including businesses, industries and institutions that are both environmentally sound and financially viable; and educational and research institutions created to support them.

Cultural Infrastructure

Famagusta presents a unique opportunity for the troubled region of the Middle East as a restoration project that turns crisis into opportunity, disunity into unification, and conflict into peace. Education, training, research, and cultural exchanges would aim at uniting Greeks and Turks, as well as other ethnic groups that inhabit the island. The goal would be to eliminate all forms of discrimination, based on race, ethnicity, gender, sexual orientation, and religion.

Physical Infrastructure

Famagusta and its environs were always known for their use of windmills, which now lay in waste like the rest of the city, a symbol of neglect and disuse. The physical infrastructure of the city would be the medium through which experiential training in peace education, human ecology and permaculture design, as well as green technologies, take place. Energy demand would be met from renewable sources such as solar, wind and hydro energy, biomass and bio-diesel. Wastewater recycling stations would be essential with biological waste treatment provided for all solid and liquid waste, with nutrient recovery. Solid waste would be reused for permaculture practices that include the use of mulch and compost for the creation of parks and public gardens. Green buildings would require rainwater harvesting and rooftops that enhance energy efficiency. The final aim is to adopt regulations that make environmental conservation and rehabilitation integral to all development initiatives.

Community Infrastructure

Historical restoration will aim at preserving the traditional architecture of the city. The old town center will be revived, and living, commercial and cultural spaces will all be connected by a central transit system. Pedestrian and bicycle paths, along with the re-establishment of the railroad and the transit lines would diminish the possibility for urban sprawl; this would protect Famagusta from the common problem facing most modern cities, namely the economic and social decline of inner city life. The old design of Famagusta was faulty with large hotels built directly on the beach, making only a handful of people rich at the expense of the natural habitat and many concerned citizens. Without social, economic and environmental prudence in the way the new city will be redesigned, the mistakes of the past will continue. The new design should encourage a greater balance between the needs of business and the needs of all people and the environment. By adopting these principles Famagusta would not only be a model for sustainable restoration but also a model for economic restoration.

Economic Infrastructure

The greatest challenge that Famagusta represents is whether we have the capacity and ability to create a vastly different economy -one that creates security by restoring ecosystems and protects the environment while bringing forth peace to all the communities living on the island. This can be achieved through meaningful work, creativity and innovation. Balance needs to be established between the divergent needs of commerce and business, along with those of ecological preservation. As in nature, business and restoration should be part of the same seamless web.

Examples of Related Projects

Bamberton in Canada, with its unique eco-community design puts all the pieces of a sustainable community together by creating a model of environmental responsibility. Curitiba in Brazil, with one of the best transportation systems in the world, provides a landmark in urban development and thoughtful planning.

The former Presidio Airbase in San Francisco (now in the hands of the National Park Services) is one of the largest ecological restoration projects ever undertaken in an urban setting. Seventy acres of asphalt and concrete were removed from the Crissy Air Field, crushed and reused beneath the parking lots and pathways. Three thousand volunteers planted 100,000 plants representing 73 native species and twenty acres of tidal marsh that is now attracting birds and animals not seen in that area for many years, plus twenty-eight acres of grassy fields and sandy beaches.

Gaviotas in Colombia uses unique “green” technologies such as solar collectors, innovative water pumps that collect clean, safe water from the deepest aquifers, and ultra-light windmills.

Conclusion

This proposal provides a unique opportunity and challenge at this very critical point in environmental history to rebuild and redesign, a previously abandoned town, using sustainable technologies and the principles of the Earth Charter. The latter emphasizes not only the importance of universal human rights, but also economic justice and ecological sustainability. The final aim is to turn Famagusta into a green zone where social and environmental justice merges with local business, industry and economics.

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See the following websites

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http://www.earthearthcharter.org
http://www.zedfactory.com/jintan/jintan.html
http://www.arup.com/eastasia/project.cfm?pageid=7047

Figure Sources

Cover photo by David Allen, 2018
Figure 01.Photo by The Famagusta Ecocity Project, 2017
Figure 02.Photo by David Allen, 2016
Figure 03.Photo by Vasia Markides, 2014
Figure 04.Photo by Constantine Markides, 2004
Figure 05.Walled-city of Famagusta, 2018
Figure 06.Photo by Vasia Markides, 2014

2

To Breathe upon a City

Ceren Boğaç

Introduction

"Let the wind stay ripped, in this insane dream
what does truth matter anyway.
Let's lie down, sleep, wake, get up
Like two dry-roasted nuts in this insane dream"

"Bırak sökük kalsın rüzgâr, bu zırdeli düşün içinde
gerçeğin ne anlamı var.
Biz bu zırdeli düşün içinde kavrulmuş kurumuş iki fıstık gibi
Yatalım uyuyalım uyanalım kalkalım"

River View/ Nehir Manzarası, Birhan Keskin

Famagusta is located 7 km south of the ancient cities of Salamis and Enkomi. The walled city, the oldest district, is located slightly toward the southern end of the coast, first constructed partially by the Lusignans and later enhanced by the Venetians. Varosha is known as one of the largest districts of Famagusta, created by non-Muslim inhabitants when they were forced to settle outside the walled city during the Ottoman conquest.

During the 1960s Famagusta grew in size and population toward the southeast of Varosha, which became an attractive resort area of the Mediterranean region. After the 1974 internal conflicts, the conditions in almost every aspect of life in Varosha, as well as in the other districts of Famagusta changed entirely. The Greek Cypriot citizens left their homes and all other properties they held in Varosha for unknown destinations and moved to the south of the island, while the Turkish citizens from the south moved to the north. Since then, Famagusta was divided into different zones. The coastal segment of Varosha was declared 'prohibited'. Kato Varosha, which is mainly composed of housing units and orange orchards, was assigned to Turkish Cypriot refugees from the south of Cyprus and to the immigrants from Turkey. Cypriot refugees settled in those houses against the property rights they left in the south declared as "Equivalent Property Law" by the Turkish administration of the island in 1986. Later, immigrants from Turkey were also given rights for inhabiting in their settled houses without any equivalence of any of their properties.

There has not been much development in the city after this fragmentation until the rapid increase of the student population of the Eastern Mediterranean University began in the 1990s. The university has been a magnet for development since then, which has made the northwest axis of the city gain momentum for urban

sprawl. Another factor that affected the development of the city was the location of dry riverbeds and open reservoirs.

I was born in Famagusta in 1979, after the fragmentation of the island. My father was a refugee from Larnaca and he was forced to leave his home during the earlier conflicts of 1963. After leaving all their property and belongings, and after moving from one place to another, my grandmother was finally given in 1974 an abandoned house in Kato Varosha that previously belonged to a Greek Cypriot, as an equivalent property for the home that she had to leave behind in Larnaca. I spent my childhood in that house, which was a sanctuary for me, a keepsake for my grandmother. This traumatic and sad experience did not stop her dreaming about returning to her home someday. She knew that we had settled in the home of people who also cherished their home and its memory and lived in the hope of returning to it, one day. My grandmother lived in that house as a guest until her last breath. She saved all the personal belongings of the former residents of the house, whom she referred to as the 'real owners'. My grandmother passed away before the borders between the north and south of the island opened for crossing. She was never able to see her home again.

Once you are born into a conflict area without realizing the facts of the situation, you develop uncertain feelings regarding the images you see around you. During my entire childhood, I was playing at the edge of the border, looking at the barbed wire without understanding what lay beyond this surreal curtain. My discovery of the personal belongings of 'strangers' in my grandmother's house was the turning point of my life. I was 6 years old when I asked to whom all those photos, glasses, books, journals etc. belonged. My grandmother replied that they belonged to the "real owners of this house" and continued by saying "who will come back to live in their house when we return to our real home in Larnaca." I still remember that I perceived this sentence as the most dangerous, threatening and painful thing I had ever heard in my life.

Early discussions of modern architecture (from the 1920s until the 1960s) had approached the dwelling as a machine for living, a matter of physical form alone. However, a house is part of the social values and/or local culture of its inhabitants, a symbolic expression of building an identity. It took me years to get over the fear of losing our home, the place where I laughed, cried, shared happy moments and created memories -even after I knew that our home did not belong to us.

Figure 01. Watching Varosha over 35 years, 1982 & 2017

Realms of Inquiry in Environmental Psychology

"I carry a pearl-like flower in my bosom:
this is a spell I had cast against life
I don't speak anymore, if I broke your heart
know that I've fallen beside you."

"Göğsümde sedeften bir çiçek taşırım:
bir büyü bu, hayata karşı yaptırdım
konuşmam artık, kalbini kırdımsa senin
bil ki yanına düştüm."

Water/ Su, Birhan Keskin

My strange but happy life at the periphery of the prohibited area of Varosha was not limited only to my grandmother's house. The house given to my parents was directly facing the fenced-off sector of the city and my high school was located next to the border. Year after year, we witnessed the fading colors, dissolving curtains and furniture of the abandoned houses; the shrubs and trees that conquered the pavements, roads and houses; the occupation of thousands of birds, mostly pigeons, of almost every apartment block and hotel. I remember a conversation with my brother, as to who could have possibly lived in those abandoned houses before the conflict occurred, while listening to stories of the vibrant past years of that wounded district from our father's experience. At that time, there were no electronic or printed resources about the place, which, as children, stimulated even more our young imaginations compelling us to envision a past utopia.

I have learned the meaning of one's place, its various dimensions and effect on human psychology from a very early age. Therefore, I decided to be an architect in the hope of helping people to build their ideal places for better living. During my undergraduate years, the human dimension of the environment had been as important to me as the formal (aesthetic) and structural aspects of the space, which was neglected most of the time.

After getting my bachelor's degree in architecture, I continued my graduate education in the field of environmental psychology. I conducted my master thesis study in one of the spectacular streets of my childhood -where mainly the refugees from Paphos had settled- at Kato Varosha, in 2002. The title of my thesis was "Adaptation and Place Attachment in a Physically Foreign Settlement: A Study of a Local Environment in Kato Varosha, Famagusta". I studied the social aspects of housing concerning the adaptation of people -as was the

case with my grandmother- to an existing settlement, which was totally foreign to them, physically and socially. It was very difficult to convince the refugees to get permission to enter their own houses, measure and document all the changes they conducted and measure their attachment patterns to this environment as older and new generations. People were afraid that my research could be part of a secret survey conducted by the government before the area was returned to its original owners and that soon they would be refugees again. My study only covered Turkish Cypriots since it was even harder to convince any Turkish immigrant from Turkey to take part in the survey.

The borders opened in 2003, which was another turning point in my life. It was the time, during which, many former Greek Cypriot residents of Famagusta came to see their hometown after 29 years of being kept away from their homes. They were generally welcomed to their homes by the current residents. Some of the belongings, safely kept by Turkish Cypriots were returned to their owners. Periodical Sunday meetings, lunches and dinners continued for a while between Turkish and Greek Cypriots in the region. After the majority of Greek Cypriots voted down the Annan Plan -the United Nations proposal to resolve the Cyprus dispute- in 2004, the crossings and visits became less popular on the island. People went back to the unchanging, extended wait for a permanent solution for Cyprus.

In 2006, I conducted another survey measuring the behavior patterns of Turkish Cypriots in the same region, after the borders opened, to trace the effects of their visits to their former environment. The results of this study were even more dramatic than those of the previous one. Before the opening of the border, almost all of the residents of Kato Varosha had hoped that one day they would return to their houses in Paphos. Visiting their old homes and being unable to find any of their old belongings and, in many cases, and even their former homes, drastically changed their future expectations. A 50-year-old female refugee who accompanied me during my visit to Paphos stated:

‘‘Finally we understood that we don’t have a ‘home’ to return back to, one day. Our houses are demolished and now we are all alone (left) only with the memories of our homes. But we wish that we would still be living in Paphos!’’ (Boğaç, 2009)

Research has revealed that people as social agents act upon the environment and assign meaning to objects. People put years of effort into transforming a house into the home that represents their individuality. All these statements lead us to conclude that if one loses his place, this may cause disorder in one’s identity.

“If I am what I have and what I have is lost, who then am I?” - Eric Fromm (1976)

During my entire life, the Cyprus problem has always circled around the competing narratives of Greek and Turkish Cypriots; one sided-truth, misrepresentations, myths, propaganda etc. Even some research neglected the fact that both communities suffered from loss and involuntary relocations. No matter how many years have passed, people battled to hold onto their old, happy memories even without having any belongings representing those times, which were all disregarded by politicians. People can feel worthless when torn away from memories that tie them to their past. Old pictures, especially childhood photographs in which our parents are holding us, as if we are the most precious being in this world, remind us of how valued we are. It is a given that we may not need any photos to remember images in our minds; conversely, regarding our early ages, photos trigger deeper emotions stored in our unconscious mind.

Could it be possible not to have any childhood photos of yourself, any memento from your past?

That was the case for most of the refugees since they had to suddenly leave their homes and run for their lives. During my research in 2006, the words of a 46-year-old female refugee from Paphos, currently settled in the abandoned house of a Greek Cypriot in Kato Varosha, will always remain with me. She stated:

‘‘There was a picture of myself when I was 6 years old in the living room of our Paphos home. My mother and father’s wedding day photos. We left them behind! We left everything behind there in wartime. Now, I don’t have any pictures from my past. How can I call a place ‘home’ if I don’t have a picture of my childhood on the wall, or of my parents from their past?’’ (Boğaç, 2009)

Anybody observing Varosha can empathize with very similar

feelings by Greek Cypriot refugees who had to leave Famagusta in 1974. They also left everything behind and still live with the hope to return to their original 'home'. This situation is difficult and upsetting for every refugee in Cyprus. However, it is even more difficult for those who are forced to live with this baggage of memories every day. How could one describe the feelings of current residents of Famagusta, such as the original Turkish Cypriot residents, displaced Turkish Cypriots who live in abandoned Greek Cypriot houses, immigrants from Turkey, and a large, multicultural student population? How could one even picture the pain, struggle and hope of former residents who pray to return?

Today, Famagusta is lost between fears for the future and conflicting attachments. This affects the development of the city in every aspect.

As mentioned previously, the development of the city has been molded through its cursed destiny. This situation has affected not only the irregular urbanization that we witness, but it has also determined the people's choice of environmental preferences. In my doctoral thesis entitled "Architecture for Meaning: Expression of Social Values through Urban Housing in Gazimağusa (Famagusta), North Cyprus", I conducted field surveys on the way in which meanings and symbolic definitions occurred as part of the architectural design of housing developments in and around the city of Famagusta (Boğaç, 2010). The results of this study showed that social meanings expressed by and/or ascribed to physical objects, as well as components of the physical environment, carry traces from people's identity crises -that are the result of the ongoing conflicts in the region. Moreover, this situation causes possible disagreements between architects and occupants in the effort to achieve an image of an ideal home. This could be perceived as one of the major environmental problems of the city in terms of having a sense of place, neighborhood and identity.

The urban problems of Famagusta cannot only be associated with the return of Varosha, presented as the most important problem of the city since 1974. Even the discussions as to who will return, where they will return to, and how will they return to the city, have always been out of question.

After more than 10 years of research experience in the field, I was still confused as to how to offer a peace model that addresses vital problems of Famagusta and how to suggest an ideal scenario that only a few may disagree with -until I came across the Famagusta

Figure 02. Map of My Childhood, 2017

Ecocity Project!

Conclusion: The Famagusta Ecocity Project as a New Empathic Language

"I was opened, I was closed, opened, closed, I saw
those who went as much as those who came,
where is the end of patience, where the grief-stricken ass,
where the audacious fruit,
where is the garden?"

"açıldım, kapandım, açıldım, kapandım, gördüm
gelenler kadar gidenleri de,
hani sabrın sonu, hani gamlı eşek,
pervasız nar nerde,
hani bahçe?"

Door/ Kapı, Birhan Keskin

Each research I conducted has always been more than a scientific achievement to me. Every study I review on human behavior and the environment, every book I read about the culture and history of Cyprus, every piece of art that I appreciate from Cypriot artists, is a channel to reach my true self.

In 2010, I received a research scholarship from the European Union and moved to Prague in the Czech Republic. Unfortunately, once used to living in a conflict zone, no matter where one goes, one brings the problems of home along. Although I promised myself to shift the direction of my studies away from conflict traumas and on to the magical spirit of Bohemia, I could not stop myself from doing research on Famagusta. It was around this time when I came across the trailer of a documentary by a young director, Vasia Markides, called "Hidden in the Sand". A few days later, I looked up the director's contact info and sent her an e-mail to ask where I could find the full documentary. Two months later, she wrote back to me with an apology for her late reply to my e-mail while graciously including the link of her documentary for me to watch.

This was the beginning of a strong friendship, which I still share with Vasia. We wrote to each other several times to discuss our experiences and attachments to Famagusta, about her family that had to leave the city in 1974 and my family that was still living there. One day, Vasia told me how much she had been haunted by the story of Famagusta and suggested that we should work on a project together about the city. We met in person in 2013 in Cyprus after

Figure 03. Famagusta, 2017

my return from Prague, and on the same day, she introduced me to her inspiring mother, Emily. I should note that my father, who is one of the best-known sculptors of the island, met with these two amazing women long before me, which I did not know. It is so interesting how life links people together without their realizing.

We met several times that same year and tried to reach out to every person that had researched or studied Famagusta to invite them to take part in our project. During the meetings, Emily introduced her vision to turn the whole of Famagusta including Varosha and the surrounding region into a model ecocity. Since then, this vision has given many Famagustians a platform to express their expectations, worries and hopes about the future of the city.

The Famagusta Ecocity Project has become an example of the sort of dialogue that may allow us to create a new empathic language between the two communities. Even simple terminology had to be clarified through the respectful presentations of specialists who contributed to panel discussions on this very topic. Nine panel discussions were conducted with sixty-five Greek Cypriot and Turkish Cypriot specialists under the headings of 'architecture', 'urban planning', 'costal and environmental engineering', 'civil engineering', 'renewable energy, permaculture and sustainable agriculture', 'history, culture and community', 'peace building and conflict resolution', 'business stakeholders', and 'economics for sustainable job creation'.

Many dramatic issues such as having two mayors, a Turkish Cypriot and a Greek Cypriot mayor attending an architecture design studio had been relatively easily overcome. Different presentations took place at two cultural centers one in the north and the other in the south. A bi-communal crowd participated interactively, not only in panel discussions, but also during the initial presentations by MIT professor Jan Wampler's architecture design studio consisting of fifteen students from the University of South Florida with the contributions of five Turkish Cypriot and five Greek Cypriot graduate students.

The project demonstrated to all Cypriots the importance of public participation in conflict resolution processes on the island. It also made it clear that developing "empathy" is the key to understanding each other's pain and in working to build a better future together.

We are now breathing together upon our city.

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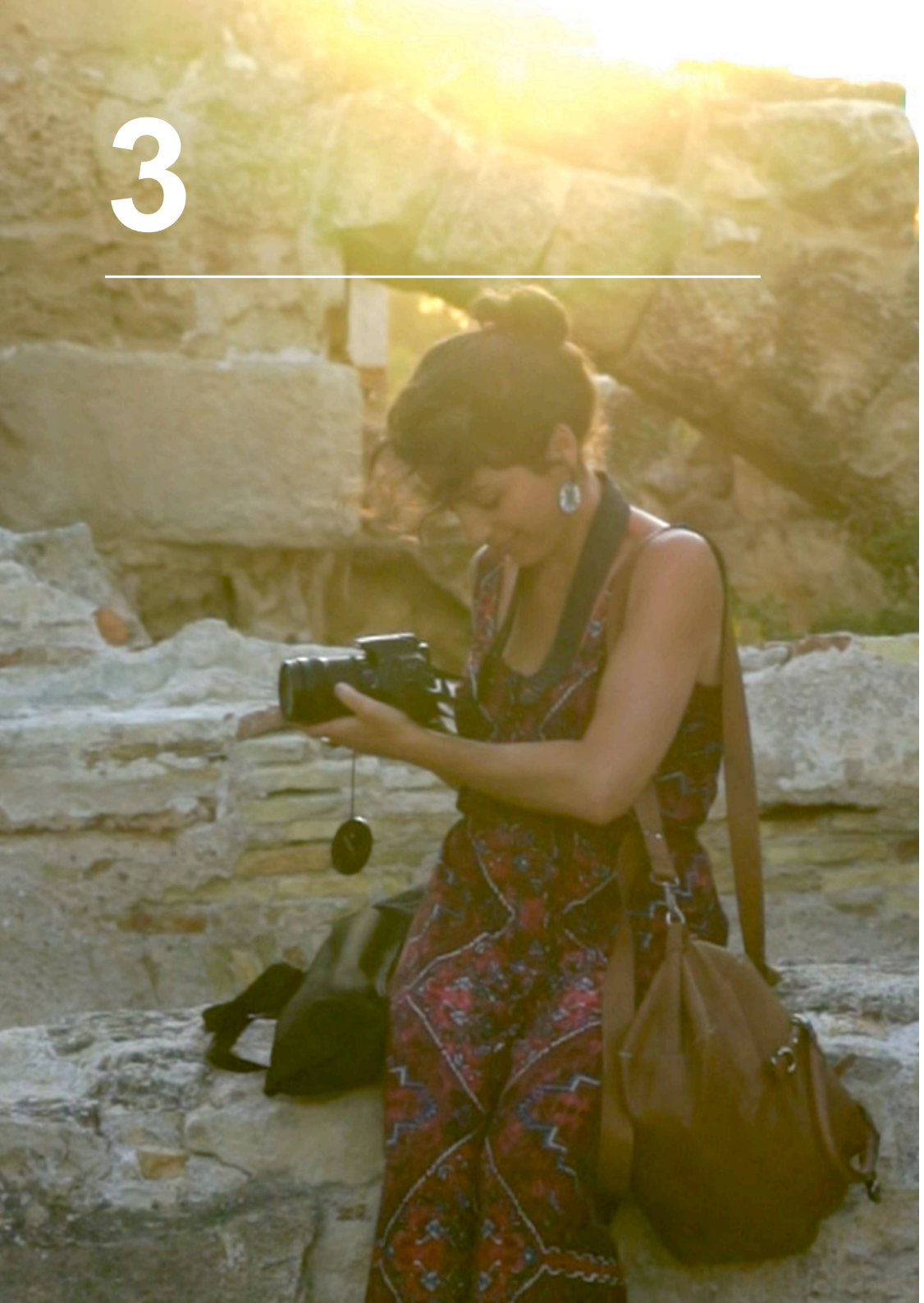
Cover photo by Never Mind Your Own, 2018 (Youtube)
Figure 01. Photo by Baki Boğaç, 1982 and Vasia Markides, 2017
Figure 02. Illustration by Ceren Boğaç, 2017
Figure 03. Photo by Baki Boğaç, 2017



3

The Origins of the Famagusta Ecocity Project (FEP): A Story-Telling Experiment

Vasia Markides

Story of a Paradise Lost

Stories have the power to shape reality. Due to technology, today we can influence public opinion more than ever before through the tales we tell, giving the act of storytelling greater power and responsibility.

Cyprus has a rich storytelling tradition, from the gods and goddesses of Olympus to the folklore passed down through stories shared across generations. As a young child I was enchanted by my grandmother's enigmatic stories of saints and miracles during our visits to her apartment in Limassol, where many of the refugees from Famagusta moved after the war. These were the stories that first sparked my imagination, something that would serve me for a lifetime, as both an artist and storyteller. The ability to see things that don't exist in front of my eyes is a gift that I attribute to the stories that have shaped me.

But it was my mother's tales of her lost city that consumed my childhood and adolescent years growing up both in Cyprus and Maine, bordering Canada, in the northeastern U.S. That was where my parents permanently relocated after the conflicts.

The lore of Varosha was always in our midst. While wandering through the forests, hiking the mountains, canoeing down rivers

Figure 01. Famagusta Postcard from 1970's

and swimming in the lakes of this stunning landscape that became our adopted home, my imagination always returned to 'enchanted Famagusta'. Having only seen a handful of salvaged family photos- the rest, abandoned during the war- I constructed my own version of the city using fragments of my mother's memories. Her memories grew hazier year by year, decade by decade, finally transforming into the utopia of a bygone era -a Paradise Lost we would always long for.

Research has shown that a memory can change a little each time you remember it. Recall makes each memory vulnerable to distortion. For instance, each time you replay your first kiss in your mind, it will be further and further from the truth of that moment. Similarly, after 45 years of being away and reliving those memories like a broken record, a limited truth remains. The remnants are mere impressions of citrus and jasmine in the air, afternoon tea with friends, games of hide and seek in the reeds on the beach, open air cinema nights. These impressions all have something in common though: they are all symptoms of a closely-knit community with cultural, intellectual and creative vibrancy. They also involve the experience of being outdoors, living in nature, and enjoying the seascape on a daily basis. It is no surprise then that these impressions of memories painted a perfect picture Famagusta in my mind.

A Post-Apocalyptic Reality

I saw the city in person for the first time in 2003. I was an aspiring painter in my early twenties, just beginning my Masters of Fine Arts, when Turkey, in a historic move, loosened restrictions at the checkpoints that had divided Cyprus for 29 years at that point. I could now cross to the north side of the island, which had been off limits to me my entire life. This was a big moment. Having never considered filmmaking before, I bought a small video camera to record my trip across the Green Line to the place of my ancestry. I joined my parents and their childhood friends who enthusiastically toured us around their former village in the pristine and rugged Karpas peninsula, where wild donkeys roam the beach. Though they were happy to relive old memories, they were also distressed at the realization that so much had changed and an entire generation of Turkish and Turkish-Cypriot families had grown up in their homes, which would make a solution and potential return that much more challenging.

Figure 02. Famagusta, 2014

Seeing Famagusta itself, however, was the most eye-opening moment for me. I expected to find the utopia that had solidified in my mind, but was transfixed by the stark post-apocalyptic reality that lay in front of me. In the solemn presence of the crumbling buildings and the last remaining vestiges of a bustling city with remnants of hair salons, sandwich shops and gas stations just a stone's throw away on the other side of the flimsy fence, there is also a strange sense of tranquility. Nature slowly and mercilessly has overtaken everything -giant bougainvilleas have devoured entire homes, large sand dunes have formed on living room floors where trees have sprouted, and prickly pear cacti spill over the fence running the perimeter of the ghost town.

The Hook

Famagusta held an unrelenting grip on me from the moment I laid eyes on it. Filming the ghost town became a compulsion that eventually led me to abandon my painting career and turn to filmmaking, just so that I could tell its story. I could not stop, and sixteen years later, I am still in its grip. Having the video camera in hand shielded me from the emotional weight felt by most Greek Cypriots who crossed over at the time. I would not have had the courage to film in such a heavily patrolled area where photographs are prohibited, had I not been able to hide behind the art and the obsessive pursuit of the story. Although I was stopped by the guards repeatedly, had my footage searched and my name written up, no one ever took me seriously enough to confiscate my camera or throw me in jail. I managed each time to slip through the cracks. I was, after all, a young woman in a highly patriarchal and militarized society. They didn't see me as a threat, and luck was always on my side.

While stumbling my way through my first documentary for my Masters thesis, I met Turkish-speaking Cypriots, whom up until now had all been strangers to me, even though we shared an island. It surprised me when I realized that they were just like all the Cypriots I had always known -generous, soulful, and full of vitality. No resemblance to the violent enemy that my four years in Greek Cypriot public school had indoctrinated me into fearing. Forming these new friendships shed light on the bigger picture of our country's tragic past. The Greek-speaking Cypriots were not the only ones who had suffered the loss of lives, homes, and identities.

The more insight I gained into the lives of the people living on the other side of the divide, the more I realized that it was not enough for me to simply expose the story of Famagusta or Ammohostos- the city whose very name translates to "hidden in the sand." Unless we truly listen to each other, understand each other, apologize and forgive each other for all the terrible acts committed by both communities in the past, there will be no peace in Cyprus and no return of Famagusta.

The aim of my first documentary short, *Hidden in the Sand*, became not only to unveil the city to the world, but also to show that the loss of lives, of homes, and of roots, was something that we shared.

Shortly after the release of *Hidden in the Sand*, I received an email from a Turkish Cypriot who wanted to talk about our mutual fixation with this town, and share her experience of growing up in Famagusta after the war. Ceren Boğaç was my age, and although her parents and grandparents came to Famagusta as refugees from Larnaca (in the south), she grew up directly facing the abandoned district of Varosha, looking into the empty living rooms, and half-eaten plates on the kitchen tables.

I thought it strange that our lives had in some ways been reversed. She was born in the city where I was supposed to grow up, while I spent my formative years in the south, near the place of her family's origin. If 1974 had never happened, the island would probably not

Figure 03. Ceren Boğaç, Emily and Vasia Markides, 2017

be divided and we would likely be living only 30 minutes apart from each other, not 5000 miles.

So here we were, both of us 29 year-olds at the time, comparing perspectives over email. But that was not the whole story; strangely enough, years earlier my mother and I had spent time with Ceren's father, Baki Boğaç a distinguished sculptor and architect. He had shared with us his extraordinary story of rescuing the abandoned artwork of a well-known Greek Cypriot artist in Varosha. By the time he was able to meet his family many years later to return the work to them, the Greek Cypriot artist, Andy Adamos, had died of cancer.

Coincidence connected me to Baki's daughter, Ceren, many years later. Although we had yet to meet in person, we occasionally checked in with one another, online. We had no idea what an important role this newly fostered friendship would play in the unfolding events of the future.

"What If…"

In the meantime, the most transformative part of what feels like my life's odyssey, from the time I was a young girl absorbing family stories until today, was the afterthought that my mother had left at the end of our conversations about Famagusta; the "what if" -that magical place where reality meets imagination and gives rise to possibility. Instead of dwelling in the past, her question asked me to look into the future.

What if Famagusta were to be revived as Europe's model ecocity? What if we were to right the wrongs of the past by leapfrogging into a future of responsible care for the people and the land, a future of energy independence, local resilience and self-sufficiency for the sake of our collective survival?

During times of increasing environmental, social and economic instability, Famagusta can become an example of a place that has figured out how to restore degraded land and to repair damaged relationships. A bicommunal united Famagusta ecocity could provide hope and inspiration in the Middle East -a region desperately in need of help right now.

Never before has a militarily occupied ghost town been revived in this way.

Never before has the concept of an ecocity been used as a unifying tool for ethnically divided communities.

Never before has a historic city at the crossroads of three

continents provided the perfect platform for a new eco-peace paradigm to emerge.

That one "what if" changed the course of my life. Nothing else could capture my imagination. I worked endless freelance jobs, from waitress to bartender to a swimming instructor, to video producer and editor for nonprofits and independent documentaries in Boston, New York City and Cyprus. As I helped the dreams of others come to fruition, my mother and I continued to scheme about how to get this big idea out to the world. I wanted to make a second film, but how could I make a film about a mere idea and some abandoned buildings? Where would the action come from? I was stuck.

Her efforts to spread the word from the top down, through organizations such as the United Nations, the European Union, and others, were bearing no fruit. Seeing her grow disenchanted, I realized that something more substantial needed to take place to make this all gain momentum. We had to invent the story in order to tell the story, all at the same time.

Figure 04. The Famagusta Ecocity Project Design Studio, 2014

Building the Team

I reached out to Ceren in Famagusta, to see if she wanted to join our team. She immediately accepted and suggested we contact MIT architect and expert in sustainable city design, Jan Wampler. Professor Wampler had previously been to Famagusta and was deeply affected by the ghost town of Varosha. I wrote him and email and asked him if he would agree to help us pursue a unified, bi-communal Famagusta ecocity. Within hours, he wrote back

an enthusiastic email offering to lead his next design studio in Cyprus. This moment sent a gush of enthusiasm and focus into the newly-born Famagusta Ecocity Project. We now had one of the biggest names in sustainable architecture on our team!

In May 2013, I left with my partner for Cyprus and started networking with various people on both sides of the divide. We visited embassies, attended cocktail parties, spread the word around with friends. We followed the tips people gave us and within a month had a very strong volunteer team comprised of diverse professionals eager to help make this project a reality. Because Cyprus is a small country, and everyone knows each other, you can get things done quickly when needed. There's a support network built into the fabric of society, which is a great strength, especially when you have few to zero funds.

Figure 05. The Famagusta Ecocity Team Members, 2014

Our team was diverse in both age and specialization, and among all of us, we covered economics, business, architecture, urban planning, environmental psychology, permaculture, art, film, and animation. Everyone was highly motivated and strongly believed in what we set out to accomplish at that time: to creatively educate the two communities on the importance of conservation and

restoration, and to excite people about this future scenario for Famagusta.

Even as our project was in its infantile stages, people from different walks of life flooded our inboxes expressing interest in getting involved. The strength of the project continues to be that it gives many different types of people a way to participate in shaping this new world. The idea has always inspired and motivated others, which is what kept us going. If we didn't believe that this vision had a pull on people, we would never have pursued it. It's so impossibly lofty and even "utopian", as some claim. But the spark in the eyes of those who listened to us, and the way they immediately opened the doors to their world for us, proved time and again that we were onto something.

But of course it is ludicrous! Famagusta is after all under occupation by the Turkish military, the two communities are still divided and mistrustful, and if the day comes for the city's return, the big business interests will try to block our every effort to protect the natural habitat and the coastline. There were many other challenges that we had to face. Among the Greek Cypriot refugees, there was a preconceived and romanticized idea of what Famagusta was, namely, the booming, tourist resort city they had left behind in 1974. That was the city that they wished to return to, despite over four decades of abandonment. On the other hand, the Turkish Cypriots who live there have a completely different picture of what Famagusta is. For them, it is the city surrounding Varosha's fence, and the city within the ancient Venetian walls. Despite these challenges, we were determined to at least bring the two communities together and put forth the ecocity idea to see what sort of discussion would be generated around a unified development plan for the city. As far as the film was concerned, one of our major goals was to create enough international buzz around the ecocity concept so that international pressure is put on all parties to resolve the issue. Needless to say, a massive amount of investment will be required to revive Famagusta, but investors will jump at the chance to fund one of the world's first cities of this type -one that so perfectly merges the principles of peaceful coexistence and environmental resilience.

Birth of The Famagusta Ecocity Project (FEP): A Powerful Catalyst for a Peaceful Settlement

The first step up this infinitely tall mountain, was to bring Jan Wampler to Cyprus to lead a research and design studio along with the help and participation of Greek and Turkish Cypriots. Not exactly a small task to accomplish, but at least we knew the next steps.

We spent months drafting up a plan and locating the funding to cover airfare for Jan's fifteen University of South Florida graduate students, where he would be teaching as a visiting professor that semester. By involving international students from outside of Cyprus, we would have fresh young minds contribute new perspectives. We hosted them in January 2014 for a week, along with 63 local experts from both sides of the divide and across nine different disciples.

The idea was to have the teams work in a setting where the two Famagusta communities -both Greek Cypriot former inhabitants and current Turkish Cypriot residents- engaged in a dialogue. The only way for this ecopolis to be born, was if the two divided communities created it together. Through the process of inventing a new world and a new language together, healing could take place and peace would emerge.

Figure 06. The Famagusta Ecocity Project Urban Planning Panel, 2014

Over the course of three days, these panels informed the audience on the challenges and opportunities in planning for a united Famagusta Ecocity. Amongst the audience members were Jan Wampler, his graduate student teams (including 10 Greek and Turkish-Cypriot masters candidates in architecture and engineering), international academics, countless diplomats (including the Greek-Cypriot mayor of Famagusta, Alexis Galanos) and members of the public.

BBC magazine covered the story, and it was the second most widely read article of the day on BBC that week, receiving two million hits by day three of its publication! It was second only to a mass theater shooting in the U.S. that week. Overnight, we became the talk of the island and beyond. 'Ecocity' became a buzzword in a place that otherwise has little regard for environmental concerns, despite it facing increasing water shortages, rising energy costs, and a host of other environmental problems.

Rallying the support of the people who would benefit the most -the Famagusta stakeholders- has been the most critical tactic. By stakeholders we mean every citizen of the city, not just those with money and power. Without a grassroots base of support, nothing can be achieved.

In their haste to move back into the city, the former inhabitants are bound to run into many issues that they are unprepared to deal with. These are the very areas that we wanted to bring into a public debate, so that we could plan intelligently and come up with solutions before people return home.

In the month following the project launch, we held various town hall meetings and other outreach events for the public. These public events, provided an opportunity to air concerns and propose new ideas. By remaining transparent and inclusive from the beginning, we were less threatening, emphasizing the importance of a collaborative process. It was incredible to see how the fears melted away, making space for a new way of thinking about things.

Preserving the Old while Embracing the New

A bold, new initiative can be threatening to those who have been longing to return to the city they had left behind. Greek Cypriot Famagustians have been waiting for more than four decades to return "to how things used to be. "Judging merely by petty rumors and false information, some think that we aim to tear their homes down and create a completely new city, or to turn their homes into

chicken coops. This is far from the truth. The memory and essence of this town and its people is exactly what we want to preserve. Famagusta was a much more sustainable community than what Cyprus offers today; a thriving city ahead of its time. It had the island's first train, and windmills that drew water from aquifers. People opened their windows and used the sea breeze to cool their homes, not air conditioners. Neighbors sat on their balconies and interacted with each other. People walked, rode bicycles and ate local fruits and vegetables free of harmful chemicals. Citrus groves inspired orange festivals, and Famagusta's golden sand beaches attracted the Hollywood jetsetters of the era. The city was artistic, cultured, and historically rich, with the ancient amphitheater and archeological ruins of Salamis, and a Venetian walled city, which was a stunning memorial to the countless civilizations and conquerors that have shed blood while staking claim to one of the most strategically-located, majestic islands in the world. In contemporary Cypriot cities, we can no longer find the lifestyle of pre-1974 Famagusta. Perhaps that is what makes the pain of the occupation that much more potent.

The hype around The Famagusta Ecocity Project that was stirred in both Cyprus and beyond put huge expectations on us even before we began the work, and we were basically rushing to keep up with the train that we had set into motion. My role as filmmaker took on another dimension, and oftentimes, I felt unsure of this new responsibility with all its demands. Acting as the figurehead for this effort meant being in the public eye (as opposed to the protected shelter of my studio and edit room), and in the line of fire of those whose private interests were threatened by the possibility of an ecocity. Walking that fine line between the maker of the story and a character in it felt overwhelming but intuition guided me through, as it did the whole team while laboring through this massive challenge.

Time Passing and New Discoveries Unveiled

Since the launch events of 2014, and the media frenzy in the months to follow, I have had a daughter (2015), left New York City with my family for Maine (2016) and continued to work on both the film and the project when time and resources allowed it. The economic hardship feels relentless at times, especially when we are denied funds because our plan challenges big interest groups, not to mention that Famagusta remains under military-occupation. No

one wants to invest money into a hypothetical idea, even though we try to explain that this is much more than just an idea -it has become a growing movement by now. Our team has miraculously stayed together, despite the incessant struggle to stay afloat while walking the tightrope of work-life balance. Our joint motivation to see this dream come to fruition, is encouraging. When one person is ready to quit, another swoops in to pick us back up again. But without broader monetary and political support for this project, we will eventually crumble.

Natural gas discoveries off the island's southern coast have elevated the stakes for a solution. Territorial disputes with Turkey have erupted, and Famagusta's fate hangs in the balance. Dreams of reunification are starting to dwindle with one failed attempt at finding a solution, after another.

Foreign powers may want to hook their claws into our island's natural gas reserves, but we must not forget that we have a big bright sun shining down on us over 320 days a year. It rains gold on us daily, and we are not cashing it in! By harnessing the limitless solar energy available to us, we can become independent from all the foreign powers that have controlled this island for centuries.

Inspiring Young Minds

It is no surprise that so many young people want to get involved in our project. They see the world they are inheriting, and they are terrified. As the leadership continues to put personal gain above all else, their resources are disappearing, their health is being compromised, and their planet is dying. I understand their dilemma, as I once was one of those young people. Plagued by frequent apocalyptic dreams, I desperately sought ways to "contribute" towards efforts at forging a new world order. Famagusta provided this window of opportunity for me, and I felt such a rush of energy at finally finding a focal point that I boldly declared it could provide me with enough work to last a lifetime. As the old saying goes, be careful what you wish for.

Hope is not lost, however. A huge change is underway all over the world. Big banks and pension funds are all falling over themselves to show off their green credentials. What people thought was a niche interest is now part of the core checklist for shareholders and investors. Simply put, projects that ignore the environment just won't get the finance anymore. Young Swedish climate change

activist Greta Thunberg is making waves in the international scene as newly emerging celebrity Alexandra Ocasio Cortez is rallying the troops for a New Green Deal in America. Things are changing.

In Cyprus, checkpoints continue to open, one recently in Famagusta, allowing increased freedom of movement and dialogue. Bicommunal efforts are increasing, and sustainability initiatives have sprung up all over the island for the first time in its history. I will be bold and say that this is in part due to our efforts. Plenty of people have told us we've inspired them.

Case Study of an Island

In 2019, I received a fellowship to go to Samsø island in Denmark. In less than ten years, Samsø has achieved something extraordinary by meeting all their energy needs through renewable energy (wind and solar mostly). They even sell excess energy back to the mainland, and it is Samsø's residents who profit from this, because they are shareholders in the wind turbines. Many residents told me that by reducing their cost of living in this way, they have been able to concentrate on doing the things they love, not working endless hours just to pay the bills. Samsø was able to become self-sufficient through the support of the Danish government, which recognizes that this is in fact the only sensible way forward. When our government begins supporting and subsidizing renewable energy over dirty and limited fossil fuels, as opposed to raising tariffs on solar panels as President Trump is doing, not only can we break the vicious cycle leading to the current climate crisis, but people can save money and live better lives.

A Story in Search of its Ending

So how will this story end? Can Famagusta find a new life again and inspire the world? What will it take for this to happen? Each person interested in this book has come to read it because they are either interested in Famagusta, or in what we are trying to birth on a broader scale. The ones I personally hope to reach with both the project and film, are not only the policy-makers or the Famagustians per se, but rather those young people across the globe who look at the world around them and think, what can I do in the face of all this?! You can do much more than you think. You just need to pay attention to the signs, put one foot in front of the other, and keep your focus on what you're trying to achieve. In that process you will

build your community of like-minded people, and when you have a support network and people who share your vision, exciting things will begin to happen. The alternative option -not acting, remaining silent, depressed, and paralyzed by fear and anxiety- will simply not cut it if we want to see better days ahead.

Figure Sources

Cover photo by Sasha Ijubojevic, 2014
Figure 01. Source: Unknown
Figure 02. Photo by Vasia Markides, 2014
Figure 03. Photo by Sasha Ijubojevic, 2017
Figure 04. Photo by Christian Bauer, 2014
Figure 05. Photo by Christian Bauer, 2014
Figure 06. Photo by Christian Bauer, 2014

Part Two

Time and Opportunities

4

What Kind of a City Do We Want Famagusta to Be? Chaotic Urbanization or an Ecocity?

Christina Elia

Introduction

Have you ever imagined how cities may evolve in the future? Although there is no way of actually knowing, society may still make some accurate predictions based on the information and facts as well as trends currently observed. Humanity is running up against the limits of a finite planet. Looking at the world at large, the human race is experiencing vast, catastrophic changes so scientists are questioning the quality of life and the amenities of future generations (Mersal, 2016). Studies show that since 1945, 11% of the earth's green surface has been damaged. Over the years, eco-systems have been destroyed, leading to the extinction of a high number of species, climate destabilization, a decrease in fresh water supply and a deterioration of natural resources. Within the next twenty-five years, one third of the world's population will be faced with water shortages. It is important to also point out that to date, 20% of the world consumes almost 70% of the materials and they own 80% of the world's wealth (Robert, 2004a; Robert, 2004b). This shows that there is disproportionality between the developed and undeveloped countries, which leads us to the following question. What is going to happen when societies living in poverty start demanding a better quality of life?

While basic necessities decrease, there is an increase in population, which means an accelerated demand for products and a higher consumption of natural resources. If you put all the pieces of the puzzle together -the population increases and the life-threatening environmental problems- you have a catastrophic scenario for the years to come. Drastic measures must be taken since the time required, to at least try to stabilize the current situation, is running out. Human actions are responsible for the fact that the Earth is reaching its limits. In order to avoid an irreversible situation, immediate action will be urgently needed to address the built-environment, urban planning, land management, food production, and the preservation of natural resources. We need to find alternative solutions and work on energy efficiency.

"Over the past decade, awareness has grown regarding the threats posed by environmental change to social, political and economic security. As the Global Risks Perception Survey 2014 highlights, three of the top ten risks in terms of impact over the next ten years are environmental risks: water crises, at the top of the table, and failure of climate-change adaptation as well as biodiversity loss." - Global Risks Report, 2015

What is the Right Way to Move Forward?

Famagusta, and in particular the enclosed district of Varosha, provide a unique opportunity and call for a new vision of sustainable city planning. There are two possibilities for the restoration and revitalization of the city. It can become yet another showcase of a chaotic and rapid expansion of an urbanized city, or it can be transformed into a model of sustainability as an ecocity. There is disproportionality between the existence of chaotic urban planned cities and ecocities, since there is a high number of rapid urbanization expansion. However, there are quite a number of examples of cities around the world that almost meet the whole framework of an ecocity.

Sustainability has been linked to the survival of different biological systems, how they can be maintained and be productive. What we have to realize is that sustainability goes beyond these parameters. Today, it refers to the need for society to develop new sustainable models necessary for the survival of the human race and the Earth (Naguib, Afifi & Wahba, 2016).

Figure 01. World Green, 2015

"Sustainability is a balancing act. Our common future noted that sustainable development meets the needs of the present without compromising the well-being of future generations"
- The United Nations Report of the World Commission on Environment and Development, 1987

The environmental issues that the world is facing are more serious than we think. It is imperative for more attention to be given to our living habits and to the protection of nature. How did we reach this situation? Over the years, different examples of city planning expansions have emerged. Some of them are the concentric expansion, the garden cities, suburbia and the urban sprawl. In order to understand why all these terms have negative effects on the earth, we have to examine their outcomes.

Learning from Practice

Concentric expansion is associated with a disorganized planning of a city, where there is constant expansion of its borders, pushing each city zone on to the next. Green spaces are lost due to high-rise concrete blocks, resulting to no flow of fresh air and no natural ventilation of the city, leading to the phenomenon of the urban heat island effect (Gartland, 2008). There is no control within neighborhoods so social diversity between poor and rich areas is

Figure 02. Most Urban Sprawl, 2000-2010 Tallahassee, 2010

created. Moving on to suburbia, garden cities and urban sprawl models, cities increase in size, but the citizen density is decreasing (Howard, 1902). If the city is expanding, this means that distances between areas are increasing too. Following this model, it becomes necessary to create new road infrastructure but there is no plan for public transportation to connect the outskirts to the city center. Furthermore, in most cases, public transportation is not affordable by many people. All of the above contribute to the increase of more privately owned cars, thus an increase in traffic. More car usage means an increase on CO2 emissions, which has a negative impact on the environment and on people's health. There is also a higher demand of fossil fuels and this contributes to the creation of scarcity of the earth's natural resources. Due to this kind of city expansion, more energy for cooling and heating becomes necessary to provide enough for all the dispersed neighborhoods and single detached houses[1]. What happens as a result is chaotic city expansion reaching an irreversible stage.

Furthermore, studies show that rapid urbanization causes informal and unplanned development of a city. Social disorientation and social gaps are created within the community. Informal planning means a low standard of living quality, poor building maintenance and safety measures that are being ignored along with the violation of planning zones. This tendency is more profound in European and North American big cities where different city zones seem to expand outward taking over the next zones and so on. If the inner circle, found at the core of the city, expands into the next zone, this means that the residential circle, which is closer to the recreational inner circle, has now moved further away. In such cases, people start to move away from the city center, since there is no social control or planning regulations and they begin searching for a better quality of life in the outskirts (Burgess, 1925). As a result, minority groups or immigrants stay in the cheaper building blocks in the center of the cities while richer people that can afford to build a new house live outside the center in a safer environment.

"If the phenomena of expansion and metabolism indicate that a moderate degree of disorganization may and does facilitate social organization, they indicate as well that rapid urban expansion is accompanied by excessive increase in disease, crime, disorder, vice, insanity and suicide, rough indexes of social disorganization." - Burgess, 1925

Studies made by the United Nations, show that urban population was 220 million in 1900 but by 1950, it increased to 732 million. In 2007, due to the evolution of technology and medicine, 50% of the world population moved from the rural areas to the cities. Predictions indicate that by 2030, approximately 4.9 billion people, and 60% of the world's population, will be moving to cities. An increase in population is leading to high traffic within the city itself. Due to rapid urbanization, Mumbai is overcrowded and because of the traffic, there is a high rate of pedestrian deaths. Another issue that big cities such as Athens face, due to rapid expansion, has to do with waste management. City centers are left neglected, and most of the times, unclean (Doytsher et. Al., 2010).

Chaotic expansion is an on-going process within a circle where there is no way to expand outwards. If no action is taken, cities that used to provide safety, good service connections, and higher standards of living will all turn out to be unsafe, with high crime rates, traffic congestions and no green spaces for people or for the city to 'breathe'.

Is There Another Way?

In recent years, there has been the notion of a new green, ecologically friendly urbanism. As mentioned before, there are areas around the world that have successfully applied the ecocity at limiting the ecological footprint of cities and restoring the relationship between cities and nature. It promotes a healthy principles into their urban planning strategy. This notion follows up the new urbanist ideas

Figure 03. Chaotic Traffic, 2018

(Beatley, 2000). This new term aims way of living, safe neighborhoods, combining work, living and entertainment within the urban fabric and creating open green spaces. It also encourages the use of environmentally friendly materials and zero impact buildings. Moreover, green urbanism aims for an ecological public transportation system, promoting car-free cities and a bike-orientated system. A tool that is being used to start promoting these aims is the concept of "built-up city-lobes separated by blue-green fingers". This term suggests that there is a balance between built up areas and green areas. It aims for higher citizen densities and the shortening of travelling distances. It also encourages the use of an easier, cheaper and safer public transportation while promoting the use of bicycles and human exercise for healthier people (Mersal, 2016).

> *"Planning for sustainability requires a systematic, integrated approach that brings together environmental, economic and social goals and actions directed toward…four objectives."*
> *- Policy Guide on Planning for Sustainability*
> *by American Planning Association, 2000*

Why do we need greener cities? Even a small change can have a big impact. Here, I would like to emphasize the concept of "nothing is lost". This relates to the enclosed area of Varosha, since most people think of the city as nothing but ruins but this is not the case, at all. A perfect example of "nothing is lost", is the New York Highline project. The old elevated railway tracks have been replaced with a green park. This provides the people of New York with a safe escape from the chaotic traffic below. A place of decay and despair turned into a green escape for the people within a chaotic city. So, if we allow our imagination to work, starting with Varosha and moving out to the rest of Famagusta, it can be restored into a beautiful city with parks and green spaces, and a vibrant community.

A small city in The Netherlands, the Houten, has been planned in accordance with the principles of new urbanism. The lobe city of Houten is organized around the mobility network. Priority is given to cyclists and the whole city is a car-free zone. The lobe system is faithfully followed so cars can only move in an outer ring and enter the city at specific, strategically placed points. There are green belts separating the car and the bike infrastructure so there is no point of interaction between the two. Car and bicycle parking spaces are located close to public transport connections. Public transport

connections do not only serve the city of Houten, but there are also direct trains going to bigger cities such as Utrecht. A new goal set for the city is to promote social sustainability by following up the ecological green management system of mixing functions such as living, working and entertainment. Even though the city is still growing, when the maximum of inhabitants is reached, the expansion of the city will stop.

Looking at another perspective of a sustainable green development is the eco-quarter EVA Lanxmeer in Culemburg, in The Netherlands. The creation of the eco-quarter focused on the social aspect and the mixing of functions. The eco-quarter is a close society where people work together for their common and private good. First, and foremost, they have their own food production farms found outside the eco-quarter. These production units provide enough food for the whole eco-quarter, creating opportunities for several businesses for the inhabitants who then sell their products to the near-by big cities. Each house has a privately owned garden area but at the same time, everybody in the neighborhood is responsible for maintaining a common community garden.

A well-balanced blue-green fingers planning is adopted so that there is a good relationship between the built areas and the green areas. The eco-quarter aims at a high inhabitant density while at the same time maintaining a high quality of life. In order to keep people from moving away, the municipality provides an affordable public transport system as well as an affordable district heating system. Even though each house is approachable by a car, there are no private parking spaces. A parking place is located within a walking distance from the residential areas, keeping the streets safe for pedestrians and for bicycle use.

Last, but not least, architects are given total freedom in designing the eco-quarter but their designs have to meet certain criteria. A variety of sustainable solutions are applied, such as the use of renewable and environmentally friendly building materials, the use of photovoltaic panels for solar energy gain, the creation of carbon neutral housing, greenhouses, green rooftops and the collection and re-use of rainwater.

One of the most well-known and successful cities to have adopted and implemented ecological development is Copenhagen in Denmark. After the Second World War, Copenhagen was among those European cities that faced rapid physical expansion due to population growth. In order to deal with this problem, a new master

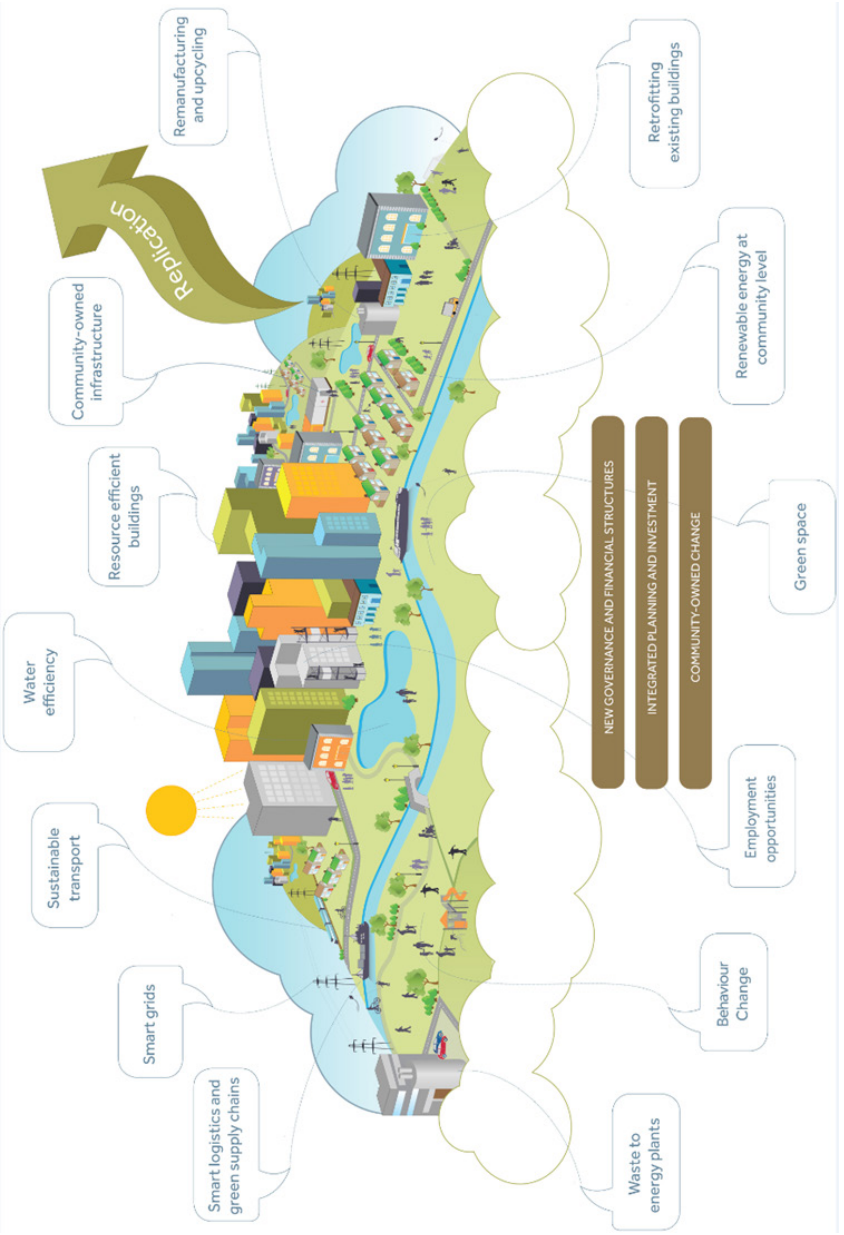


Figure 04. Sustainable City, 2016

plan, called the 'Finger Plan', is created in 1947. The plan aims at having five fingers 'inserted' into the core of the city creating, in this manner, a new buffer settlement organized by the necessary infrastructure of road and railway systems (Caspersen, & Olafsson, 2010). The plan manages to provide easy public access to all the areas of the city. Each station is planned in order to be a focal point of a high-density area consisting of mixed functions and housing. The space between the fingers, kept as an open green space, supports agriculture, recreation and serves many other purposes. The idea behind the 'Finger Plan' is for citizen density to be high enough, so that affordable rail public transport can be maintained within the lobes of the city. Different communities are involved in the concept of building, living and working, so that future inhabitants may learn to safeguard their common spaces, respect each other and resort to cooperation.

Copenhagen is a bike-friendly city and one of the city's goals is to reach zero carbon emissions in the near future. Since the development of the plan, there has been an expansion of the city. The expansion, carried out after analysis and planning, is firmly based on the principles of the 'Finger Plan'. Green fingers are protected and a high quality of easy public transport connections are maintained. The mapping method, as a planning tool based on solid principles, explains the success behind the expansion. Ørestad is a successful sustainable region in Copenhagen, which followed the above principles of the 'Finger Plan' as it continues to expand. To this day, Ørestad has increased the sustainable quality of Copenhagen while at the same time it has also increased the city's international reputation by attracting new investors (Knowles, 2012).

The cases presented above, indicate that there is a brighter future for sustainable cities due to a new ecological urbanism. Green cities, well thought out planning maps and social sustainability offer a road map for a better, healthier world to live in.

Smart Ecocity: A Step Ahead

"Smart eco-city; an experimental city which functions as a potential niche where both environmental and economic reforms can be tested and introduced in areas which are both spatially proximate (the surrounding region) and in an international context, through networks of knowledge, technology and policy transfer and learning." - Sengers, 2016

Existing smart eco-city projects can be found in various countries, such as The Netherlands, in particular Amsterdam, Eindhoven, Rotterdam and Utrecht. In all four cities, smart city platforms are designed aiming at lowering CO2 emissions, creating energy savings, smart living, electric and smart mobility, smart grids and climate change adaptation. The first project applied in Amsterdam is the City-Zen project, a smart grid approach. It aims at sustainable district heating and green building. Installing new sustainable technologies in old houses reduces CO2 emissions. This particular case indicates that an existing city can be retrofitted with new technologies, rather than opting to developing a smart city from scratch (Sengers, 2016). Another project is the Vechicle2Grid, which promotes the use of surplus energy, from the household profiles, by means of electric vehicles. This project aims at more energy efficiency and reduction of the usage of fossil fuels while encouraging a sharing economy. In Utrecht, smart mobility is also put into practice by the new concept of drivers sharing each other's electric car charging stations. Through sharing, the cost of future infrastructure investments is limited and there is a reduction of greenhouse gas emissions through the promotion of electrical vehicles.

In Eindhoven, a digital library called WoonConnect, a 3D building representation, contains hundreds of eco-friendly building materials and techniques. People are able to create a new house or adjust an existing house to their wishes and at the same time get a direct energy efficiency report from the 3D information model. All this information is shared with the community.

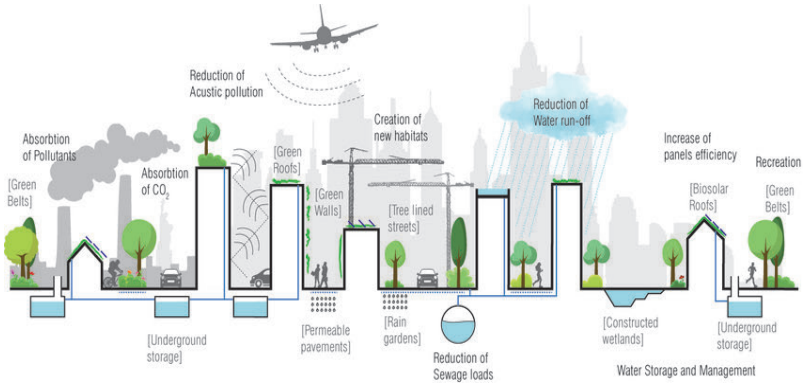


Figure 05. Ecosystem Services of Urban Green Infrastructure, 2017

A different focus on water management treatment is found in Rotterdam. The Benthem square, or the 'water square', is created in order to prevent the city from flooding due to heavy rainfall or from sewage overload. Apart from water management, the square functions as a socializing urban regeneration space for the public. Last, but not least, it is important to stress that part of the idea behind the creation of this multipurpose square is the citizens' involvement in making their square sustainable. The citizens and the stakeholders involved were part of the design process, a relatively new approach in Rotterdam, which came out to be successful (Sengers, 2016).

Overall, in order for smart ecocity approaches to be used, the basic new urbanism ideas must be applied. However, we can observe that many sustainable aspects of ecocities are progressing, thus there is a promising future for the ecocity idea to take off.

What Kind of a City Do We Want Famagusta to Be?

The city of Famagusta is one of the oldest cities in Cyprus. It has numerous architectural monuments of great value, a unique cultural character, and a rich history. Many traditional architectural buildings within the enclosed area of Varosha, have not been tampered with, due to the fact that Varosha was fenced off and remained untouched for over four decades. These architectural treasures ought to be protected and preserved with great care, at all costs.

If there is rapid urbanization development that happens upon the reopening of the city, it will end up becoming yet another failed and unsustainable place to inhabit. By adopting a design of unsustainable development, all manifestations of the outcomes of the chaotic expansion will be the future trait marks of the city. There will be no social sustainability since the uniqueness of having a peaceful, cooperative, bi-communal city, consisting mostly of Greek-Cypriots and Turkish-Cypriots, will be forever lost. Famagusta will turn out to be yet another divided, cold and unfriendly city, made out of concrete.

However, what will happen if Famagusta follows the new urbanist vision in its reconstruction? Just imagine all the wonderful qualities that a well thought out plan for ecological development would bring to the city. There is a great possibility for Famagusta to become a leading example in Europe of a carbon neutral city with a restored coexistence between nature and its built environment, with a good

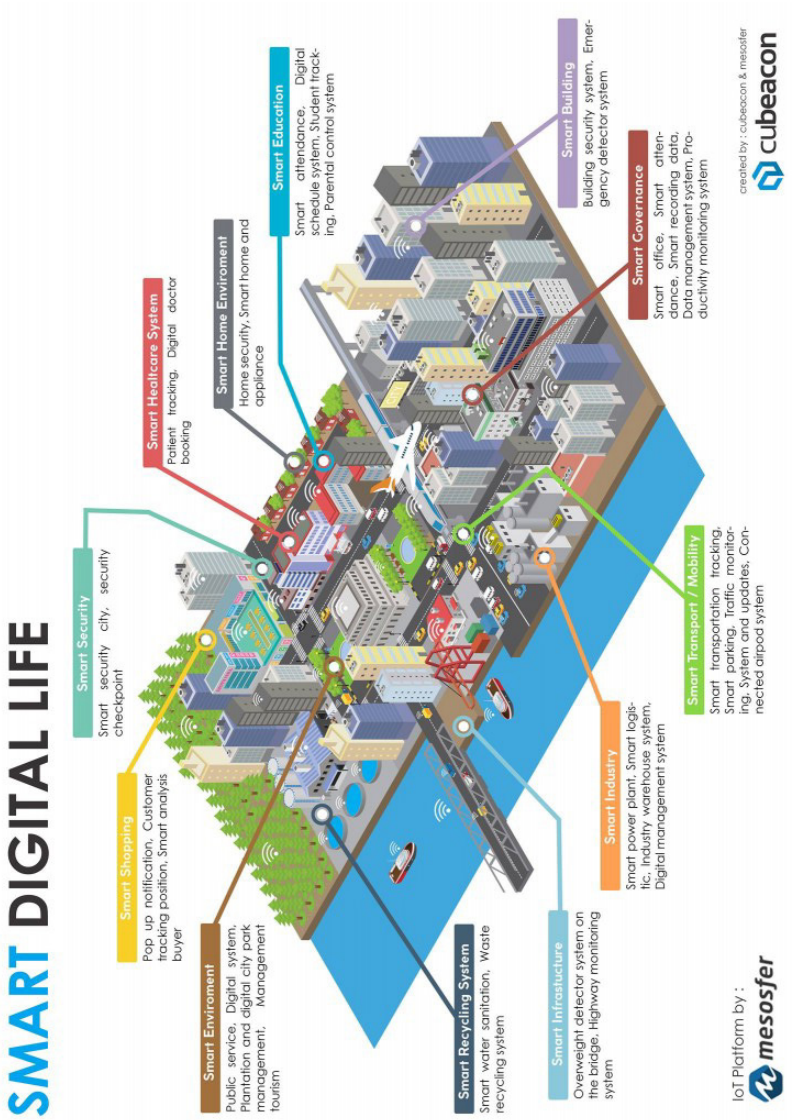


Figure 06. Smart Digital Life Architecture, 2017

public transport system with car-free zones and a resilient, healthy, and diverse community. New environmentally friendly architectural solutions can be applied in restoring and renovating the rescuable buildings while at the same time their original architecture will be maintained and preserved. Open green spaces can serve as natural ventilation for the city with central squares to attract community gatherings. Famagusta can be a healthy, friendly city with high quality standards, a most highly valued place to live.

What Gets in the Way of Change?

In order to be successful in adopting a new urbanist approach, the Famagustians must be seriously considered and consulted. When people hear of the possibility of a new solution, they are usually scared because it is something out of their comfort zone. It is important to point out, that it is even more difficult for the Famagusta inhabitants to accept a new approach, since they are eager to return to their homes as they remember them. In most people's minds, an ecological approach implies demolition of buildings so that parks may replace buildings. Sustainable development does not imply the destruction of buildings but rather by means of the right application of ecological principles, the existing infrastructure can be restored for a brighter future. Policy-makers, politicians and investors can also play a huge part in this restoration process. What if there is a new way for all of the key stakeholders to co-operate? The designers, the architects and the urban planners can work together, alongside the politicians and the local inhabitants of the city (Robert, 2004a).

The entire Famagusta community should be given the opportunity to be part of their city's planning. However, there must be a clear explanation of the ecological principles at work, so people can understand the full potential of this new urban development.

Figure 07. Sustainability Goals, 2018

Through the lessons learned from the involvement of citizens and all kinds of different stakeholders in the decision making of the 'water square' in Rotterdam, Famagustians have to move away from their traditional way of dealing with problems in order to have a successful and sustainable future.

"Think Globally, Act Locally"

Even though this chapter focuses on Famagusta's possibilities of adopting new forms of ecological development, in reality the recommendations offered go beyond the city of Famagusta. A single spark is enough for the ignition of a big fire, thus Famagusta can be the spark for more ecocities/ecovillages/eco-quarters to flourish in the whole of Cyprus, the entire region, and the world. A new transit-orientated development can be the beginning of a new vision of a public transport network for the whole island. Famagusta can become a new architectural model of restoration and innovation. Sustainability is not only about ecological, social and economic issues of the immediate future of Famagusta, but also for future generations to have a quality of life at least equivalent if not better than the present.

The earth needs more ecocities in order to tackle population increase, climatic change and chaotic urban expansion. The knowledge for sustainable development exists and many case studies have positive outcomes; lowering CO2 emissions, healthier and safer environment, economic growth and public space for people and the community. It is not an easy path to follow, however many examples show that it is, by all means, possible and feasible. We have to increase awareness of the need to change our mindset and influence all stakeholders, including policy makers and decision makers. The ecological approach provides a healthy future for our planet. Famagusta can offer a new model of an ecocity assuming that the right planning decisions are adopted in such a way that local culture, economy, ecology, environment and social issues all fit together the ecocity jigsaw puzzle in perfect co-existence.

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5

Economic Ecocity Opportunities for Cyprus

Fiona Mullen

The Need to Adapt to Global Instability

Nothing can be taken for granted!

On Saturday, March 16, 2013, all of us who lived in the southern part of Cyprus woke up to find that we could not get any money out of the bank. For the next 48 hours, we checked our stores: how much rice, pasta and tinned food did we have and how long would it last? Although the banks did start to issue some cash Monday[1], they remained closed to customers. Online transactions were not possible[2] and no one was sure when or whether the banks would open again. They eventually opened their doors again twelve days later on Thursday, March 29[3], but with capital controls that put strict limits on how much money could be removed from accounts[4]. It was the first (but not the last) time that capital controls had been implemented in a eurozone country[5].

This episode made us all reassess what we had previously taken for granted: cash in our pockets, fuel in the car and food in the cupboard. Prior to the events that led to this, the Republic of Cyprus economy (the economy of the Greek Cypriot community or GCC economy), had seemed untouchable. It had enjoyed uninterrupted growth from 1976 until 2008 -for 32 years in total[6]. The unemployment rate averaged just 4.4 per cent between 2000 and 2008[7]. Despite wars all around the region, the Republic of Cyprus, now a member of the European Union (EU) seemed untouchable. That all came to an end with the first recession in 2009 and four years later with the financial crisis. Without the support of EU taxpayers and the International Monetary Fund (IMF), all savings in at least three of the major banks would have been lost, as they would not have survived. The Republic of Cyprus would have defaulted on its debts and it is unlikely that it could have survived as a member of the eurozone. This would have led to mass devaluation and all the hardships that accompany such events. It might even have led to an exit from the EU[8].

The support from EU's European Stability Mechanism and the IMF came at a heavy price, however. After parliament rejected an initial plan to 'bail-in' or 'haircut' a proportion of all savings by turning deposits into shares, the final plan involved a haircut on all deposits over €100,000, full losses for all bondholders (some of whom had naively converted their deposits into higher-yielding 'convertible bonds'[9]), the closure of the second largest bank and a massive rise in the unemployment rate, which reached 16.7 per cent at its peak. Youth unemployment soared to more than 40 percent and is above

25 per cent today[10].

Moreover, this realization came less than three years after another big shock, when the lights literally went out, thanks to a massive but avoidable explosion of confiscated Iranian armaments, that knocked out the main power station and killed 13 people[11].

Events put a premium on self-sufficiency

How are these events related to the Famagusta Ecocity Project? They are related in a number of ways. The first has to do with the uncertain world we live in today. If someone had told you five years ago that Britain would be the first country to vote to leave the European Union, you might have found it amusing. Similarly, if you have been told that an unconventional businessman and television star would become president of the United States, you might not have believed it. Things are also changing much closer to home in Cyprus.

Russia (a longstanding supporter of Greek Cypriots) and Turkey (a longstanding supporter of Turkish Cypriots) are suddenly friends[12]. Israel (a new ally of Greek Cypriots) and Turkey have also made amends[13]. In addition, it is highly uncertain where the internal domestic politics of Turkey is heading in the coming years. The world around us is changing very rapidly.

As a small country, which has often suffered when big powers clash, this puts a premium on establishing good relations with all the island's neighbors. This can only be achieved with a solution of the Cyprus problem. Moreover, since a united Cyprus will be the only country in the Eastern Mediterranean region that can talk to all of its neighbors, this will significantly enhance its capacity to act as a regional broker. If everyone in the region has an interest in a stable Cyprus, this will also make the island considerably more secure.

The shocks of recent years also put a premium on enhancing food and energy self-sufficiency, or at the very least, diversifying sources. While the discovery of offshore natural gas in 2011 initially raised hopes that Cyprus could become energy self-sufficient, six years after the discovery, finding an export market remains extremely challenging[14].

The Need to Avoid the Mistakes of the Past

Another reason why these stories are relevant is to help us learn from the mistakes of the past. The journey to the empty cash tills

started several years before March 2013. Although EU membership brought with it higher standards in a whole range of areas, it also laid the foundations for a bubble that burst only a few years later [15]. As interest rates converged to eurozone levels, lending soared, rising on average by 19.7 per cent in the three years 2006-08[16]. Housing loans rose even faster, by an average 27 per cent in 2006-08. As a result, household debt shot up from 100.3 per cent in 2001[17], to 124.8 per cent of GDP by June 2009[18]. This was also much higher than the average 63 per cent in the eurozone[19].

With such a heady pace of growth, supply would inevitably outstrip demand. In 2001, new dwelling stock had exceeded new households by just 163 dwelling units. By 2007, when residential house prices rose by 21 per cent [20], the excess was 10,000[21].

Have we learned any lessons?

In sum, the crisis was caused by a credit-driven property boom, fueled by low interest rates and made worse by the fact that there were few other alternative sources of growth. Have we learned any lessons from the past? Unfortunately, there is reason to be concerned that we have not. One way in which the government has tried to support developers with very large debts and banks with very large bad loans is through the 'naturalization by exception' scheme. Under the latest revision, citizenship may be acquired by those who invest between €2.0 million and €2.5 million in various approved schemes, including in real estate. Largely as a result of this scheme, property sales leapt by 32% compared with the same period in the first nine months of 2016. Cement sales also soared by the same amount [22]. Although there have been some efforts to diversify the economy and encourage entrepreneurship[23], the latest rise in real estate sales underlines how attached the GCC economy is to the old ways of doing things.

The need to create sustainable jobs

One way to avoid the mistakes of the past is to improve competitiveness -that is, to improve the economy's underlying ability to adapt and create sustainable jobs. So far, neither side of the island is performing well in this regard. In the World Economic Forum's *Global Competitiveness Report 2016-17*, the Republic of Cyprus' global ranking tumbled 18 places to 83, from 65 in the previous year[24]. This latest ranking put the GCC economy in the bottom half

of the 138 countries covered. In an annually produced proxy index that uses the same methodology as the World Economic Forum, the Turkish Cypriot Chamber of Commerce ranked the economy of the Turkish Cypriot community (the TCC economy) in 2015-16 at 121 out of 141, down from 114 out of 145 in the previous year[25]. While one can raise some questions about why the GCC economy result came out so badly[26], the fact remains that competitiveness is relative: one economy's gain is *always* another economy's loss. Standing still, therefore, is not an option. This is especially true for economies, like the GCC using the euro and TCC using the Turkish lira, which use the same currency as other competitors.

As regards price competitiveness there are only two routes to enhancing competitiveness for economies that have fixed exchange rates against their competitors. The first option is to cut wages (known as "wage compression" in the literature). However, as we have seen in Greece, depressing incomes has widespread and disruptive social and political consequences[27]. The second option is to enhance productivity (typically measured as the amount of output produced per hour of work).

The productivity challenge

While there is a role for government in setting the right conditions for businesses to flourish[28], at the business level, raising productivity typically requires investment: either in human capital (skills and training) or in physical capital (faster or more efficient machines). Without a solution of the Cyprus problem, raising productivity is going to be challenging for both the GCC and the TCC businesses, given the various restraints on new investment. As a result of the financial crisis in 2013, fixed capital investment in the GCC economy dropped by more than half: from a peak of 27.2% of GDP in 2008 it was just 13.3% of GDP in 2015[29]. Further investment is hampered by the fact that the GCC economy has a large overhang of corporate and household debt, as well as by far the highest non-performing loan ratio in the eurozone[30]. This means that, for many years to come banks will be more cautious in lending and households and corporations will be under pressure to 'deleverage' (reduce debt). This, in turn, will reduce new credit for investment to improve productivity and create jobs. While the largest bank on the island, Bank of Cyprus, reported that it had expanded new lending to the economy by €1bn in January-September 2016[31], this is far smaller

than lending in the boom years of 2007-08, when the total stock of lending by all banks leapt by an average €11.4bn per year[32]. Credit growth in the TCC economy is also hampered by the small economy with little access to international markets, as well as high interest rates[33].

The need for foreign investment

These conditions suggest that the primary route for raising productivity will have to come from foreign investment. A settlement of the Cyprus problem will, by itself, provide a boost, thanks to the new opportunities for sectors such as tourism, higher education, shipping, property development and, last but not least, natural gas[34]. A Famagusta ecocity should attract even more investment. As we learned while preparing the *Peace Dividend Revisited* report, of which I am a co-author, "the bigger the idea, the more easily one attracts private finance."[35]

How Energy Efficiency Can Raise Competitiveness

One way in which a Famagusta ecocity can contribute to raising the competitiveness, and therefore the job-creating capacity of the whole island is through energy. There is now a growing recognition that energy efficiency is important in raising competitiveness. As noted in recent research, "EU firms introducing new products with energy-saving features tend to be more successful innovators… Controlling for other determinants of innovation success in the market, these eco-innovators sell more new products than conventional innovators, and this may give them an important competitive advantage[36]. At present, Cyprus falls in the middle of EU countries when it comes to energy efficiency[37], meaning that there is still plenty of scope for improvement. By attracting the latest renewable technologies (see below), a Famagusta ecocity can be central to raising the competitiveness of the whole island.

Fossil-fuel dependency leads to volatile costs

Improving energy efficiency and diversifying energy sources is important because of the volatility of energy costs for companies. Despite the very sunny climate, 92.3 per cent of electricity in the GCC economy is generated by burning diesel and mazut (one of the dirtiest forms of fossil fuels), while solar energy production accounts for just 1.1 per cent[38]. Power stations in northern Cyprus also

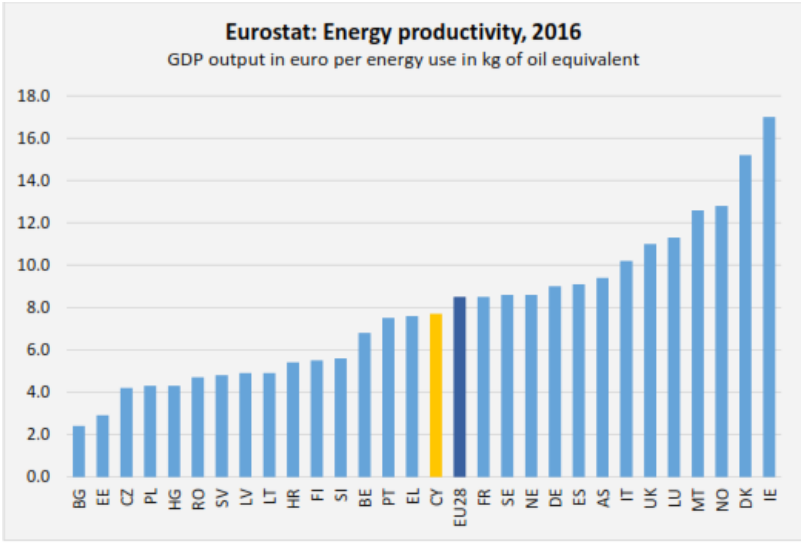

Figure 01. Eurostat: Energy Productivity, 2014

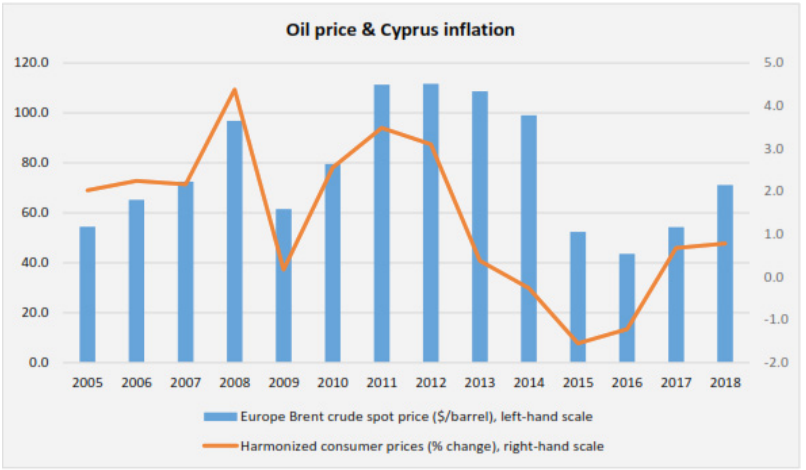

Figure 02. Oil Price & Cyprus Inflation, 2018

produce electricity by burning fossil fuels. Dependence on imported fossil fuels makes businesses highly vulnerable to changes in international oil prices. This affects input costs, inflation-linked wages and thus has a damaging impact on competitiveness.

The energy vulnerability became acutely apparent in the 2011-12 period. In order to pay for the reconstruction of the power station, the state-owned Electricity Authority of Cyprus (EAC), which is the monopoly provider for small users in the south, added surcharges to electricity bills that were already very high because of international oil prices of more than $100 per barrel[39]. Household electricity tariffs including taxes leapt from €15.58 per Kilowatt hour (KwH) in the first quarter of 2009 to a peak of €29.09/KwH in the second quarter of 2012 -marking a rise of almost 87 per cent in four years. This briefly gave the GCC economy the second highest household electricity costs in Europe after Denmark[40]. It also led to a massive increase in input costs for businesses just as the economy was entering a deep recession. The number of voluntary company insolvencies rose from 750 in 2010 to 981 in 2011 and 1,144 in 2012 -a rise of more than 50 per cent in two years[41]. Although it is difficult to separate the impact of higher electricity costs from other variables, electricity costs rising at more than 20 per cent per year during a recession must undoubtedly have contributed. Prices have come down since, but they are on their way up again[42]. Imagine if the blazing hot sun that led to the explosion in the first place was used to generate electricity for homes and small businesses. Imagine if households and small businesses had been self-sufficient in energy at that time. This is exactly what the Famagusta ecocity envisages.

The Famagusta Ecocity as Focal Point for Business and Investment

A truly unique tourism offering

The Famagusta ecocity will help a united Cyprus to address its chronic competitiveness problems by raising energy efficiency and by diversifying energy sources. It can also attract significant foreign investment in three areas: tourism, renewable energy clusters and higher education. The first and most obvious opportunity is that the Famagusta ecocity will offer something completely new for tourists. One of the greatest risks of the return of the closed town of Varosha is that it will simply turn into another low quality, high-volume tourism destination. Another is that businesses will be tempted simply to build more casinos, engaging in the “copy-paste” approach that has to date been common among Cypriot entrepreneurs on both sides of the island but which leads individuals to financial ruin when they fail to spot that the market is already saturated.

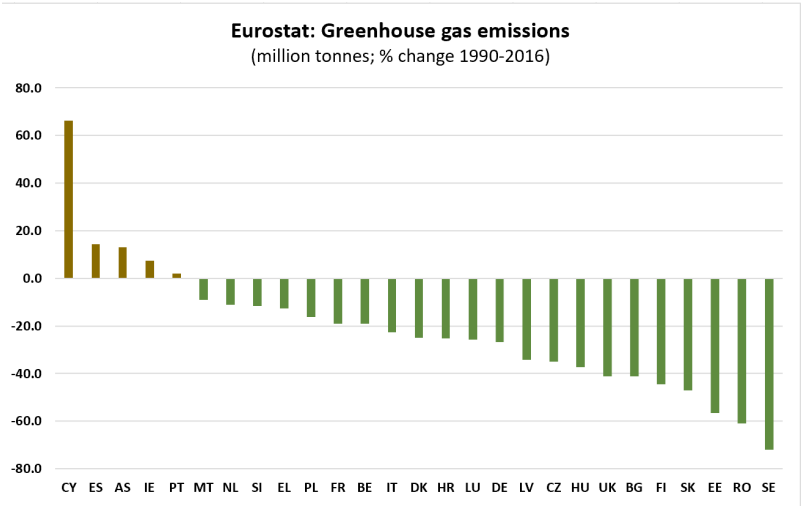

Figure 03. Eurostat: Greenhouse gas emissions, 2017

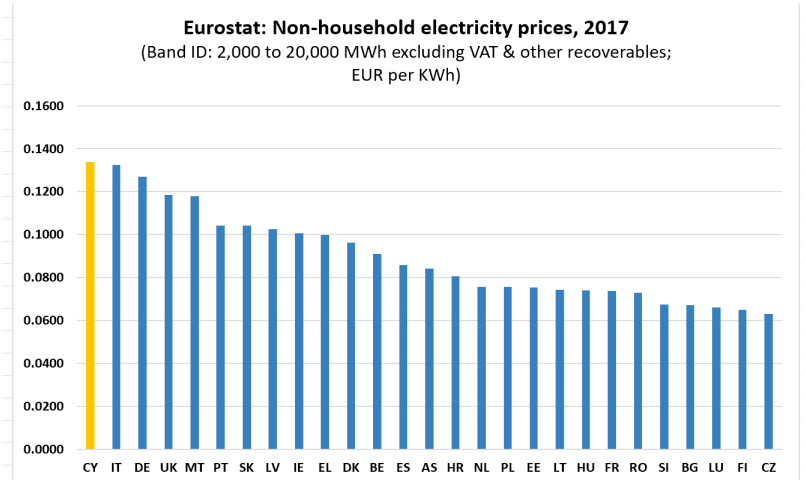

Figure 04. Eurostat: Non-household electricity prices, 2017

The Famagusta region is already home to immense cultural heritage, such as the Salamis Roman ruin and sites inside the Venetian walls. It also has natural attractions, such as the wetlands. A Famagusta ecocity will complement this by offering something completely different to tourists: a liveable, walkable, family-friendly city with plenty of public transport. Offering something different

is important, given changing tastes among travellers. According to one report, "The increasing expectations of people will generate more demand for discretionary expenditure on travel and tourism … Individuals, particularly those in the developed countries, have an increased social and environmental consciousness, seeking 'authentic' tourism experiences[43]." In a united Cyprus there will already be at least ten upmarket casinos, with more on their way[44]. More casinos will not meet the challenge of providing variety. A Famagusta ecocity, on the other hand, presents an opportunity to offer something unique, which will not be offered anywhere else in Cyprus or the region.

A cluster for renewable technologies

The second is that a Famagusta ecocity can create a cluster for renewable energy technologies. The southern part of Cyprus already has centres of excellence, partnered with world class institutions, at the Cyprus Institute. These include the Energy, Environment and Water Research Center, partnered with the Massachusetts Institute of Technology (MIT), and the Science and Technology in Archaeology Research Center (STARC), partnered with the Centre de recherche et de restauration des musées de France (C2RMF). At the moment the Cyprus Institute has to find pieces of land for implementing, for example, solar energy research. An integrated Famagusta ecocity can become a working laboratory for cutting-edge research into renewable technologies.

A Famagusta ecocity will also attract global companies who will be able to use an EU country to display and promote their latest technologies. It will generate the kind of high-quality employment that should help prevent further emigration of young Cypriots and help the economy address the disruption expected to arise from the development of (for example) robot technologies.

A centre for conflict resolution

Since the region of Famagusta is expected to straddle both the Greek Cypriot and Turkish Cypriot constituent states, it will be a living example of the benefits of inter-communal cooperation. Famagusta is already an education city, thanks to the large Eastern Mediterranean University in northern Cyprus. It would also be an ideal regional center for research into conflict resolution, attracting researchers from The Middle East, the Balkans and other countries.

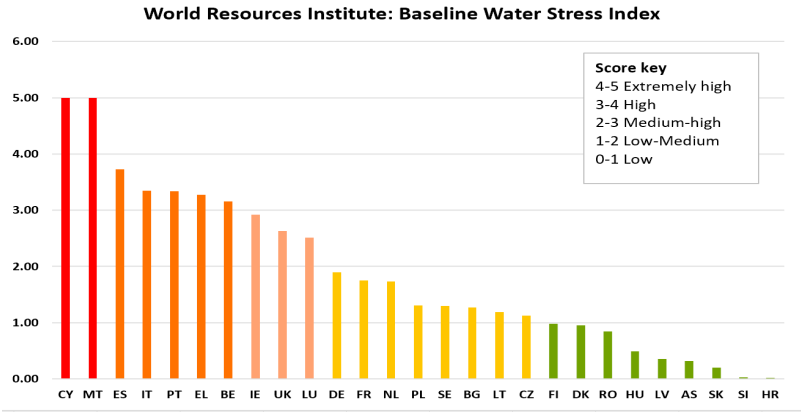

Figure 05. World Resources Institute: Baseline Water Stress Index

Conclusions

If a Cyprus settlement is found, property owners and planners in the closed town of Varosha will be under pressure to pour concrete without much thought, turning the area into just another ugly coastal town attracting low-spending tourists. They will be tempted to copy what is being done in Limassol and Kyrenia and turn the beachfront into another casino strip. This will not offer anything new to tourists, nor will it be an attractive proposition for foreign investors, who will be concerned about casino saturation. It will not address businesses' vulnerability to international oil prices. It will therefore do nothing to address the chronic competitiveness problem that limits the economy's potential to generate sustainable jobs for young people. More disturbingly still, it is likely to cut off Varosha from the rest of Famagusta and create a *de facto* divided city, split between competing Turkish Cypriot and Greek Cypriot administrations.

We face a future in Cyprus, which we can carry on making a "quick buck" from unsustainable developments, making ourselves vulnerable to global instability and high oil prices, or we can learn from the mistakes of the past and grasp this unique opportunity to do things differently. The Famagusta Ecocity Project offers exactly that opportunity: a vision based not on sand, but on creating solid foundations for the political and economic stability of Cyprus and the prosperity of all its citizens.

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Figure 01. Graphic by Fiona Mullen, 2018
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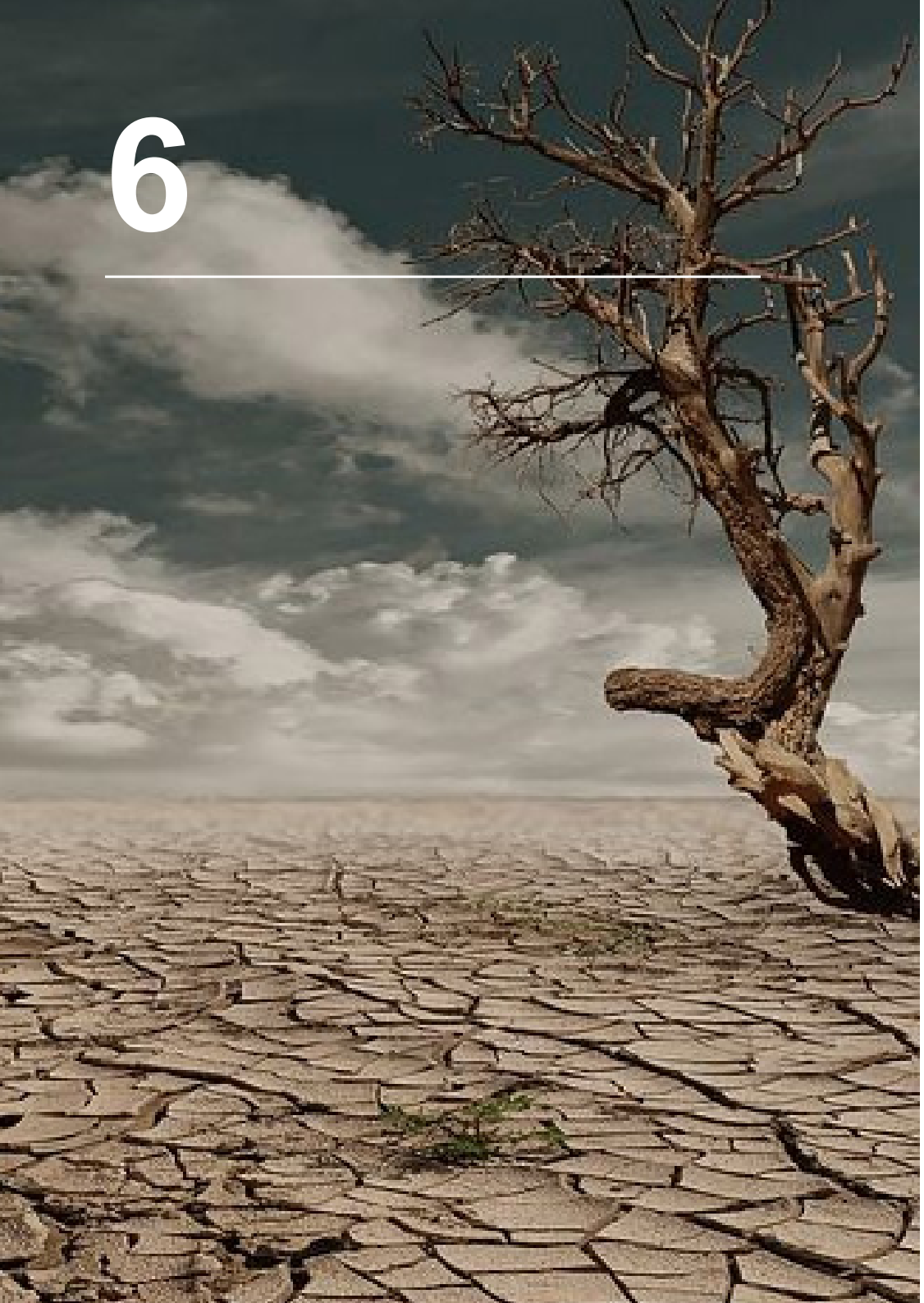
Part Three

Urban Ecological Sustainability and its Challenges



6

The Impact of Climate Change on Cyprus

Roger Kelly

The Global Picture

There is a consensus among the scientific community across the world, apart from the inevitable few mavericks, that the earth's climate is changing at a rate not seen since the end of the last great ice age. The principle reason for this rapid change is also agreed to be human activity and in particular the release of so called 'greenhouse gases' into the atmosphere since the beginning of the industrial revolution. These gases, of which carbon dioxide (CO2) is being released in the largest quantities although fluorinated gases (for instance CFCs which were common as refrigerants and in aerosols) are the most potent, act in the same way that a greenhouse does, by trapping solar radiation and only allowing a small proportion to escape. Instead of the solar radiation being trapped in a glasshouse or polytunnel on the ground however, helping crops grow faster, it is trapped within the earth's atmosphere and causes the entire surface of the planet -land, sea and air- to increase in temperature. This overall warming process then causes knock-on effects on weather patterns including rainfall, wind speeds and ocean currents, as well as affecting the size of polar ice sheets and mountain glaciers.

As a non-scientist it can be difficult to understand why this change in the climate to higher overall temperatures is considered such a problem. Depending on where we live across the planet

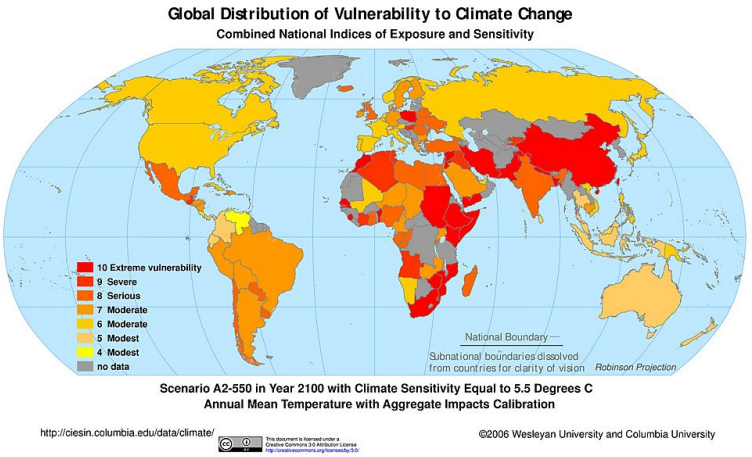


Figure 01. Global Distribution of Vulnerability to Climate Change, 2006

we may already be subject to very high differences on a seasonal or even daily basis, possibly up to 70ºC between midsummer and midwinter, so the impending disaster that is predicted if global temperatures increase by 3ºC seems incomprehensible. Just a one degree change in this overall planetary temperature however can cause significant change in weather patterns and ecosystems are very finely balanced in relation to temperature, rainfall and other climate factors. The very particular combination of plants, animals, birds and insects found in any one location will be disturbed and changed by the smallest increase in annual temperature and that in turn will impact the way human life is conducted in that location, even threatening the ability of humans to survive in some instances.

A huge amount of effort in being put into computer modelling the possible effects of each degree of global temperature rise by teams of highly qualified scientists in every part of the world and their results are being constantly shared and critiqued. It is fair to say however that apart from some very broad conclusions it is still extremely difficult to predict exactly what changes will occur to weather patterns and ecosystems at any one point on the planet. Effects that scientists had predicted in the past would result from global climate change are now occurring: loss of sea ice, accelerated sea level rise, longer, more intense heat waves and an increase in the number, duration and intensity of tropical storms. The effect on human populations will include an increase in climate related disease, malnutrition and forced migration on a significant scale. There will also however be regions which positively benefit from climate change, where crop yields will increase or even where crops can be grown for the first time, with a consequent improvement in the ability to support human life.

One other certainty is that we cannot prevent climate change from happening -the current concentration of CO2 and other greenhouse gases cannot be reversed, in fact will inevitably carry on increasing to some extent throughout this century whatever action is taken. What can be done however by concerted cooperation between nations at the global level is to limit this increase and thereby prevent the consequences of temperature rise above 2ºC which could threaten human survival over large areas of the planet.

The Mediterranean as a Whole and Cyprus in Particular

There is considerable agreement among scientists that particular parts of the planet will be more vulnerable to the effects of climate change and that these will be mostly concentrated in a variable belt to the north and south of the tropical regions, including southern areas of Europe, particularly the whole Mediterranean basin, Asia and North America as well as parts of South America, Southern Africa and Australia. The Mediterranean is likely to see a large decrease in rainfall and conversely an increase in extreme summer heatwaves and droughts. This in turn will result in a serious shortage of fresh water, making the cultivation of rain fed crops impossible and other crops, mostly fruit and vegetables, dependent on intensive, highly water-efficient production methods. At the same time marine ecosystems and fish stocks are likely to be adversely affected by increased temperatures. Less water diluting sewage effluent can also cause problems for water treatment plants.

There are a number of health concerns related to climate change in the region too -an increased risk of heat strokes and other heat-related illnesses as well as parasitic and viral diseases, poorer air quality, particularly in urban areas, made worse by increases in Sahara dust storms bringing mineral dust and high aerosol concentrations which lead to respiratory illnesses.

Cyprus, as an island in the easternmost corner of the Mediterranean, while being subject to the overall trends identified for the region as a whole, has its own particular geographical character which will determine the detail of how climate change will affect it. In many ways the island should be better able to withstand the effects of higher temperatures and lower rainfall than many other Mediterranean countries, as it has the Troodos mountain range which is high enough to attract more rainfall annually and some snow cover in the winter -effectively a water storage system. Cyprus has however for many years had problems with water supply generally -the UN determines that it is subject to the highest 'water stress' of any EU country- and in particular the over-exploitation of groundwater resources for agriculture, resulting in salt water incursion into the aquifers which have historically provided much of the irrigation water needed for crop growing. The building of two major desalination plants has temporarily resolved this problem, but they in turn depend on fossil fuels for their operation so are

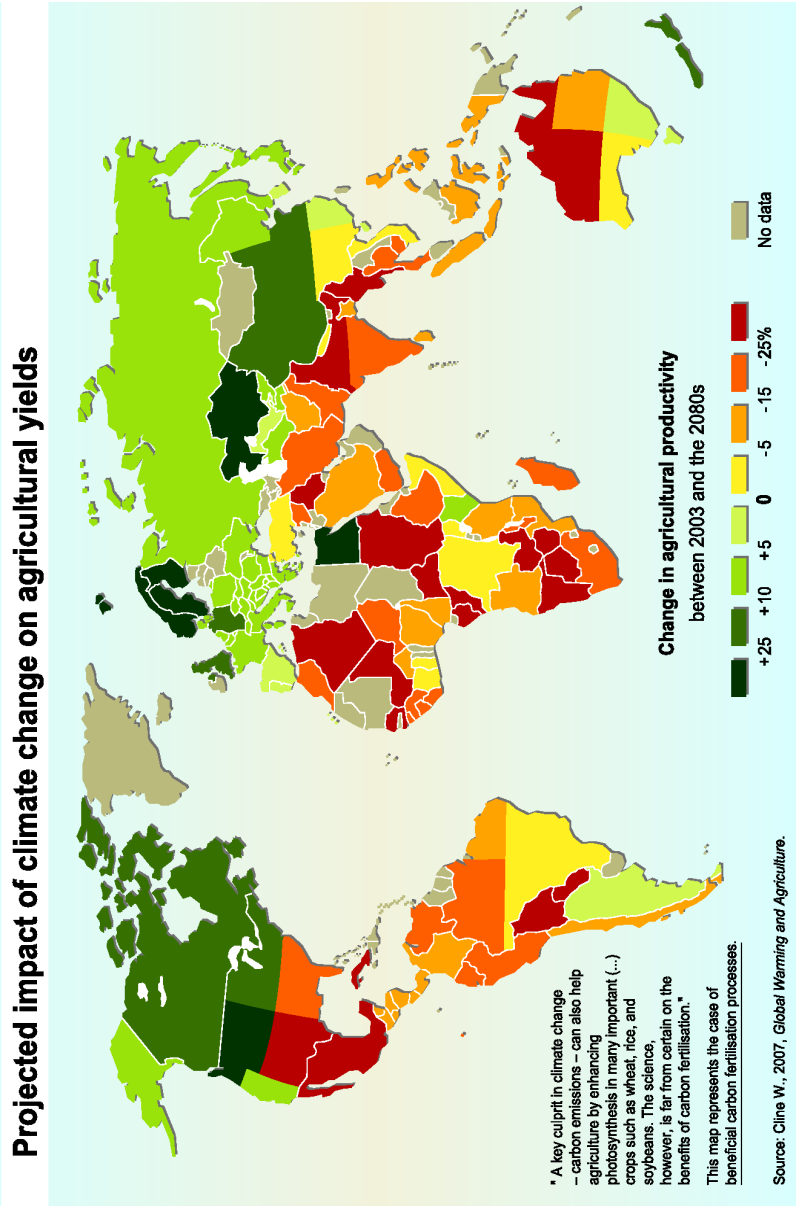


Figure 02. Projected Impact of Climate Change on Agriculture Yields, 2007

unsustainable in the long term. The water pipeline from southern Turkey, which was initiated in October 2015, will also ease problems in the short term but there are many concerns globally about the long term sustainability of what are termed ‘interbasin water transfers’. The predicted combination of higher temperature and lower rainfall may well mean that agriculture will no longer be possible in some parts of the island by the end of the century, particularly the low-lying Mesaoria plain where land use could shift away from food production towards solar energy farming.

Energy supply and demand in Cyprus will also be heavily affected by climate change, although the overall demand balance may not be radically different. There will certainly be an increased requirement for summer cooling, but this could be offset by improvements in the efficiency of cooling systems and a greater use of passive cooling techniques in particular, while there will also be a reduction in the already relatively small winter heating demand. The biggest challenge will be to shift the island’s energy supply side from its current very heavy dependence on fossil fuels –not only for electricity generation, but transport and agricultural fuels as well- to a 100% renewable future, most likely to be based on solar technologies with a smaller contribution from wind. The economics

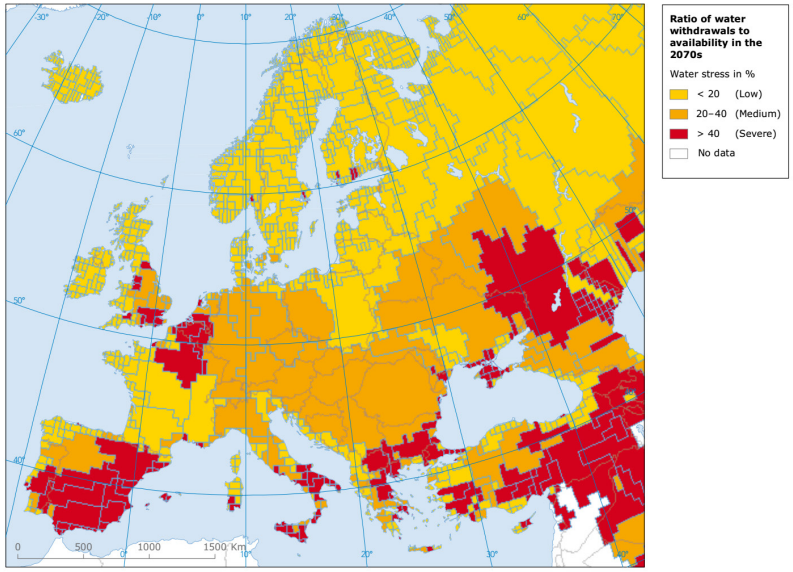


Figure 03. Ratio of Water Withdrawals to Availability in the 2070’s, 2011

of photovoltaic (PV) technology are improving faster than even its strongest advocates predicted and it seems certain that, in the middle of the day in lower latitude parts of the world, PV generated electricity will very soon have zero or even negative cost. There are in parallel enormous improvements being made in the efficiency and economics of energy storage systems, which are essential to even out the inevitable fluctuations in the supply of energy from renewable sources.

Impacts of climate change on Cyprus

Climate change at the global level already requires a twofold response from human society, generally described as Adaptation and Mitigation. Adaptation acknowledges that climate change is happening and to an extent unstoppable, so seeks to find ways in which human life can adapt to its consequences with the minimum adverse impacts to the economic and social fabric. Mitigation on the other hand involves actively pursuing social and technological changes which will limit the further emission of greenhouse gases and will ultimately lead to a way of life which maintains a sustainable future climate.

Cyprus will need to adapt to three main consequences of climate change –firstly extreme summer temperatures and drought, secondly lower rainfall and therefore less availability of fresh water and thirdly sea level rise affecting the low lying coastal areas.

Adaptation to the first two of these go together in many ways –high temperatures mean people needing more water to replace losses from evaporation as well as wanting to have recourse to swimming pools as a means of staying cool, so there is a clear conflict of response emerging which may need cultural as well as technological change. The electricity generating system in Cyprus is always under stress in the middle of very hot days because demand for air conditioning is at a peak, in the opposite way that in more northerly climates a peak occurs in winter early evenings. Reducing this need for more air conditioning may involve technology –better system efficiency or more radically a shift towards passive cooling systems such as have been practised for centuries in North African and Middle Eastern countries. It may also involve cultural changes –towards working patterns concentrated at the beginning and end of the day with a period of midday rest (in effect the traditional siesta) to reduce the need for workplace air conditioning. It

may even require an abandonment of the need felt for private individual swimming pools in favour of community pools or sea bathing. The proliferation of golf courses with their high irrigation water requirement will probably have to be reversed too. Climate change and these consequent adaptation measures may well result in a drop in tourist numbers for the whole Mediterranean region including Cyprus, as countries further north become more climatically attractive to the tourism industry, so the economic basis of the region will have to adjust to this possibility.

Higher temperatures and lower rainfall will also impact heavily on the island's agricultural sector, shifting the emphasis away from field or arable crops which require either consistent winter rains or inefficient spray irrigation towards fruit and vegetable production which can use targeted drip-feed irrigation or even more efficient hydroponic and integrated aquaculture technology. A few niche crops such as the reverse transpiration carob or the prickly pear will actually flourish in the changes and some new crops better suited to higher temperatures and lower water requirements will be introduced. One technological innovation which could become widespread in the coastal areas of Cyprus is the 'seawater greenhouse' which drip feeds seawater through a porous honeycomb wall, removing the salt and using a fan to circulate a mist of fresh water across the greenhouse crops, so allowing intensive growing without the need for conventionally treated and supplied water.

The decline in arable crops will make animal husbandry, which is also water and energy intensive, less economic so the island may have to rely more heavily on imported meat products. High levels of meat consumption are increasingly being seen as unsustainable globally as well as having adverse health consequences, so Cyprus may see a return to the more classic Mediterranean diet in which meat plays a minor part relative to fruit, vegetables and unrefined carbohydrates. Other than in agriculture, water efficiency measures will also have to be adopted for industrial and domestic purposes, including better designed taps and toilet flush mechanisms, more collection and storage of the decreasing quantity of rainwater together with widespread recycling of waste water.

The possible extent of sea level rise in different parts of the Mediterranean Sea is very uncertain, but a number of studies suggest that it could be less than in other seas and oceans, with estimates between 0.2 and 0.5 metres by the end of the century, but some predictions showing a lower rise in the Eastern Mediterranean.

Figure 04. Solar Panels as Renewable Energy, 2018

Even these relatively small rises however will affect the low lying coastal areas of Cyprus, Larnaca in particular, but Limassol and Famagusta as well where parts of the coast are at or very close to sea level. In addition to this risk there is the probability of more severe storms and rainfall concentrated in fewer but more extreme events, as happened in Cyprus during the summer of 2016, both of which are likely to cause flooding incidents. Adapting to these combined risks will need a combination of watercourse management in the mountain areas of the island to slow down or divert water run off, some physical flood defences and the redesign of coastal settlements to allow increased water levels to dissipate without damage to buildings and infrastructure.

One final area of adaptation to climate change which is already highly topical but which society shows great reluctance to address is that of migration. There will undoubtedly be a bigger movement of human populations than has ever been seen in history, as parts of the planet become unable to sustain human life with disease and conflict inevitably adding to the problem. Cyprus will not be immune to this wave of human movement and will need to establish how it can make its own fair contribution to such a global crisis.

Climate change mitigation – ensuring that global temperature rise does not reach a 'tipping point' where feedback mechanisms

cause even more dramatic change, alongside the development of ways of life which significantly limit future emissions of greenhouse gases – will involve radical rethinking of many aspects of Cyprus society. The first challenge will be to eliminate fossil fuels entirely from the energy supply needed for electricity generation, transport, agriculture and industrial processes, replacing them with renewable resources. Luckily in many ways climate change in Cyprus will result in it being even more suitable than it currently is to take advantage of the developments in solar PV technology mentioned above. The combination of increasing efficiencies and decreasing costs with the likely 'desertification' of the Mesaoria plain, the large area of mostly flat low lying land in the east of the island, will make this an eminently suitable location for large scale PV installations capable of providing almost all of the annual national energy demand along with some additional supply from wind farms. PV technology however only generates energy in the form of electricity and only during daylight hours, so the bigger technical challenge is in providing 24 hour a day energy in all the forms needed including liquid fuels. Even with

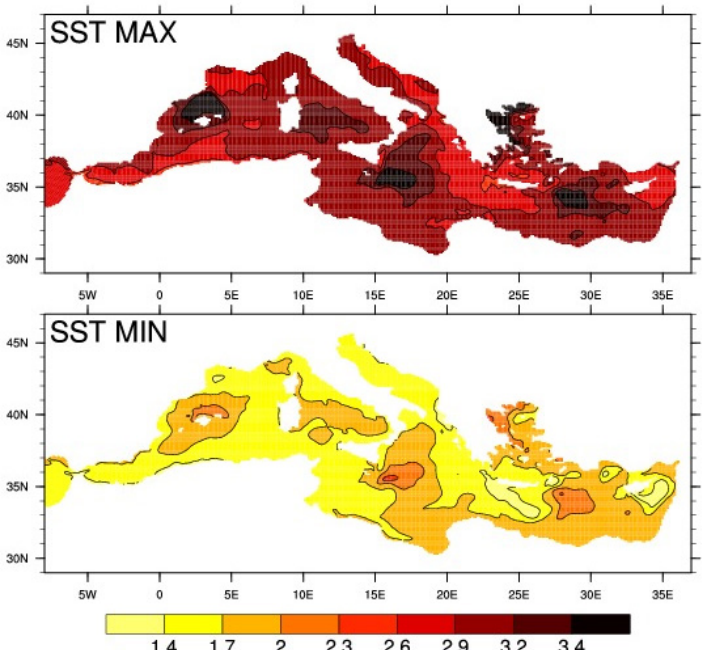
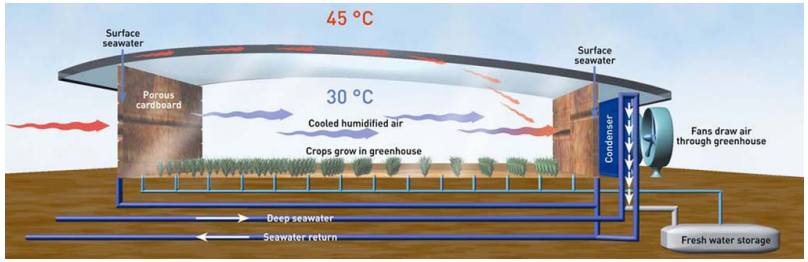


Figure 05. Composite of Sea Surface Temperature Anomalies, 2018

a peak demand for air conditioning in the middle of the day it will still be possible to generate a significant surplus of electricity at this time when solar radiation also peaks, and with advances in both battery storage and the conversion of surplus electricity into gas and liquid fuels, this surplus energy will be easily able to be stored in forms which allow electricity supply 24 hours a day as well as transport and other needed fuels.

Part of this equation will also involve changes to the way transportation operates in Cyprus and in particular the high dependence on private motor vehicles -the most inefficient form of transport possible. It is very difficult to service the population of rural areas without them, but urban areas need to develop efficient mass transportation systems that make it quicker and easier for people to satisfy their needs for movement without private vehicles. Re-opening the Cyprus Railway as a fast, easy electric service connecting Famagusta, Nicosia and Morphou would also significantly reduce the need for longer distance road transport.

The last piece of the mitigation jigsaw will be a re-thinking of urban development, in the design of infrastructure as well as



	Seawater Greenhouses vs. Conventional Modern Greenhouses[1]	Why
Revenue	No difference	• Similar crop yields and prices
Operating Costs	10-25% less	• Free water • No exposure to fossil fuel inputs • Reduced/no pesticide costs
Fixed Costs	10-15% less	• No need for cooling, heating, C02 enrichment, or desalination equipment • Cheaper land
Returns[2]	15-35% greater	

Figure 06. Seawater Greenhouses vs. Conventional Modern , 2018

Figure 07. Climate Change Migration, 2018

individual buildings, to incrementally reduce energy demand for domestic, commercial, industrial and transport needs while providing thermal comfort conditions for the urban population. A more dense urban fabric with integrated land uses which reduces the need for movement combined with well shaded public spaces and generous planting will help achieve this goal, as will buildings incorporating more 'thermal mass' which allows slower heat absorption during the day with the heat re-released to the atmosphere at night, together with effective shading to south facing facades. There are already best practice examples being initiated in hotter, drier climates such as the Arabian Gulf which could provide a model for future development in Cyprus.

The potential regeneration of Famagusta as an Ecocity provides a unique opportunity to bring together all these adaptation and mitigation techniques in a way which could demonstrate the most positive responses to the challenge of climate change and then be replicated in the other towns and cities of the island. Much of Famagusta is barely above current sea level and will be affected by any rise in this level, so one or more of a number of strategies will have to be implemented to address this. The most obvious and probably the easiest is to limit development to the higher ground inland, but this would also limit the city's attraction to the tourist industry, so a more realistic strategy might combine a new raised promenade and quayside with a network of canals capable of absorbing both an overall rise in sea level and periodic flooding,

with new buildings constructed above any predicted flood levels or with lower floors capable of withstanding flood water. Some new developments might even project out to sea on stilts in a way similar to traditional piers or on floating foundations.

The Famagusta Ecocity will also provide the opportunity to put in place all the other measures described above in terms of urban infrastructure, building design, transportation systems and food production, such that its development could act as a catalyst for the future of not only the other towns and cities on the island, but all coastal settlements around the Mediterranean basin.

Figure Sources

Cover photo by Roger Kelly, 2018

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Figure 07. Source: Photo courtesy of: www.middleeastobserver.org, 2018

7

Urban Planning and Conflict Transformation as Pathways to Sustainable Development

Warren Haffar

Introduction

Between the world's population growth and the demands that growth places on our limited natural resources, our common evolutionary path has led us farther and farther from anything even approaching sustainable development. At the same time, our understanding of the causal connections between human activity and the environment are increasingly more complete, as is the recognition that unsustainable development is at the root of many of our most pressing problems.

The basic equation in understanding sustainable development is simple enough: increasing population growth plus increasing consumption against finite resources has produced environmental degradation and resource depletion. What remains as a significant challenge is how to move to a model of sustainable development within a reasonable timeframe that helps save the planet. Sustainable development is difficult to achieve under the best conditions; it is an even greater challenge when trying to achieve it within a conflict or post-conflict environment.

John Paul Lederach, one of the seminal figures in the field of conflict resolution writes: "The difficulties of attaining a durable peace in contexts of protracted violence suggest we know more about how to end something painful and damaging to everyone but less about how to build something desired." (Lederach, 2005:41).

Figure 01. Deforestation, 2018

We are in dire need of practical and applied models that address both sustainable development *and* the conditions that are less then optimal found in post-conflict environments. Their infrastructure is often fractured and cooperation and good will between groups are negligible and under-explored. This is a major challenge that conflict and post-conflict settings pose to those seeking sustainable development solutions. Even more significantly, is the opportunity that sustainable development efforts offer in addressing such settings that may lead to conflict resolution and peacebuilding.

From this perspective, the Cyprus conflict in general, and the problems facing Famagusta and surrounding area of Varosha in particular, represent grassroots efforts for peacebuilding through sustainable development. For the Cypriots on either side of the dividing lines in Cyprus, political solutions have been disconnected from daily life. It has been left to political elites to render a solution for the entirety of the Cyprus problem. The result has been a frozen conflict that has stagnated in political gridlock until only recently. The iconic fenced-off sector of Varosha within an otherwise rapidly developing Famagusta presents a major challenge to replace the community hopelessness with purpose and empowerment for environmental protection and sustainable development. The ecocity concept sets the stage for a comprehensive community action plan that has a very real chance to build broad-based support where other efforts have been stymied in Cyprus. It also offers an exciting and promising model of sustainable development as a

Figure 02. San Jose, 2018

means to achieve conflict transformation and peace by appealing to a common love of a shared island, potentially transcending divisions by providing a much-needed template for moving forward toward reconciliation.

Sustainable development

Sustainable development is usually defined as development that meets the needs of the present without compromising the ability of future generations to meet their own needs. The 1987 World Commission on Environment and Development otherwise known as the Brundtland Commission produced the definition of sustainable development that sought to connect three critical pillars of sustainable development: Economic sustainability, social equity, and environmental protection (Brundtland & World Commission on Environment and Development, 1987). While these are inherently qualitative measures, meaning they are not able to be precisely measured, their component parts have been generally understood to mean the following:

- Economic sustainability is the need to strike a balance between economic growth and the carrying capacity of the environment. Economic growth should move away from a reliance of fossil fuels and toward renewable resources and green infrastructures.

- Social equity seeks to address social inequalities and values in a way that elevates social needs and the quality of life globally. Social equity acknowledges that one of the threats to sustainability is an imbalance between the developing and developed worlds and that these imbalances need to be corrected and sustainably balanced.

- Environmental protection lies at the very core of sustainable development, and it is a target against which economic and social indicators need to be measured.

Implications of the model imply that Sustainable Development (SD) is functionally dependent upon Economic Sustainability (ES), Environmental Protection (EP), and Social Equity (SE). All three of these elements are interwoven and interrelated; indeed, not only are they connected, they require each other for sustainability to be realized. For sustainable development to flourish all three components need to be acknowledged and balanced with each other or development will be unsustainable over the long term.

Figure 03. Sustainable Development, 2018

Written algebraically, the model for sustainable development equation presents itself as:

While all three are important, the social component of sustainable development is of special relevance, particularly in places like Cyprus, where development has been uneven because of the conflict, derailing forward movement on environmental and economic spheres of the sustainable development equation. In cases like this, social conflict presents a unique ability to undermine sustainable development. At the same time, it also presents an opportunity to address conflict indirectly through a common appeal to environmental sustainability.

Sustainability and Linkages to Peace

Sustainable development is a difficult goal to achieve, even in the best of circumstances. It is particularly difficult when infrastructures have been largely designed around consumption of materials that

are in increasingly short supply. We also live in a world of contrasts. We have designed megacities for a constantly growing urban population set against a backdrop of poverty, conflict, and war for the majority of the world's population, representing a staggering level of global inequality. These levels of inequality present not only a model of unsustainability, but they also set the stage for an endless cycle of conflict between groups on either side of the development divide.

Given this basic fact, peace is a critical ingredient to the forward progress of any of the component parts of the sustainable development equation, making the relationship between sustainable development and peace a foundational one. Simply put, very little social or political progress can be achieved in a setting that has conflict and war as a predominant feature of daily life, let alone meet the requirements for sustainable development. What is needed is a holistic model for sustainable development that acknowledges peace as a required precondition. Even better would be a model that applies sustainable development efforts as a means to achieve peace and conflict resolution.

Figure 04. Sustainable Peace for a Sustainable Future, 2018

Viewed through this lens, the Famagusta Ecocity Project in Cyprus is already making new and exciting inroads toward innovation on both peacebuilding and sustainable development. The project represents a new approach to one of the fundamental threats to sustainable development, protracted conflict and war as well as offer a model for social healing through sustainable development in the aftermath of conflict. A revised formula that explicitly acknowledges the centrality of peace in sustainable development, and models it as a common, unifying goal to achieve peace is ultimately of great value to sustainable development efforts. This equation underscores the central relationship between sustainable development and peace:

The formula above denotes Sustainable Development (SD) as an integral function of Peace (P). In turn, it places Peace (P) within the Sustainable Development formula to extend the idea that peace is foundational to each pillar of the sustainable development equation in relation to peacebuilding.

The Famagusta Ecocity Project and Conflict Transformation

More than abstractions, the above formulas help us to overcome some of the most vexing obstacles to sustainable development, particularly in a post-conflict setting punctuated by inequality. They highlight an applied model bringing together the element of peacebuilding through sustainable development efforts. The Famagusta Ecocity Project taking place on a small island divided by conflict is significant for many reasons, foremost of which are environmental necessity and preservation of shared natural resources. But it is also a significant effort because it brings groups in conflict together for sustainable development. This is a model, which is almost completely absent in the international arena and is applied only in the context of small community-based conflicts. All of the representative components of a holistic equation for sustainable development in a post-conflict setting are applicable to this project making it an ideal model far beyond its local scope. Perhaps most significantly, from a peace and conflict resolution perspective, the project is providing to be a blueprint for a process of conflict transformation through sustainable development.

Process-based solutions are a hallmark of peace and conflict resolution approaches. Sustainable development as a process lends itself to the cultivation of collective stewardship on the island of

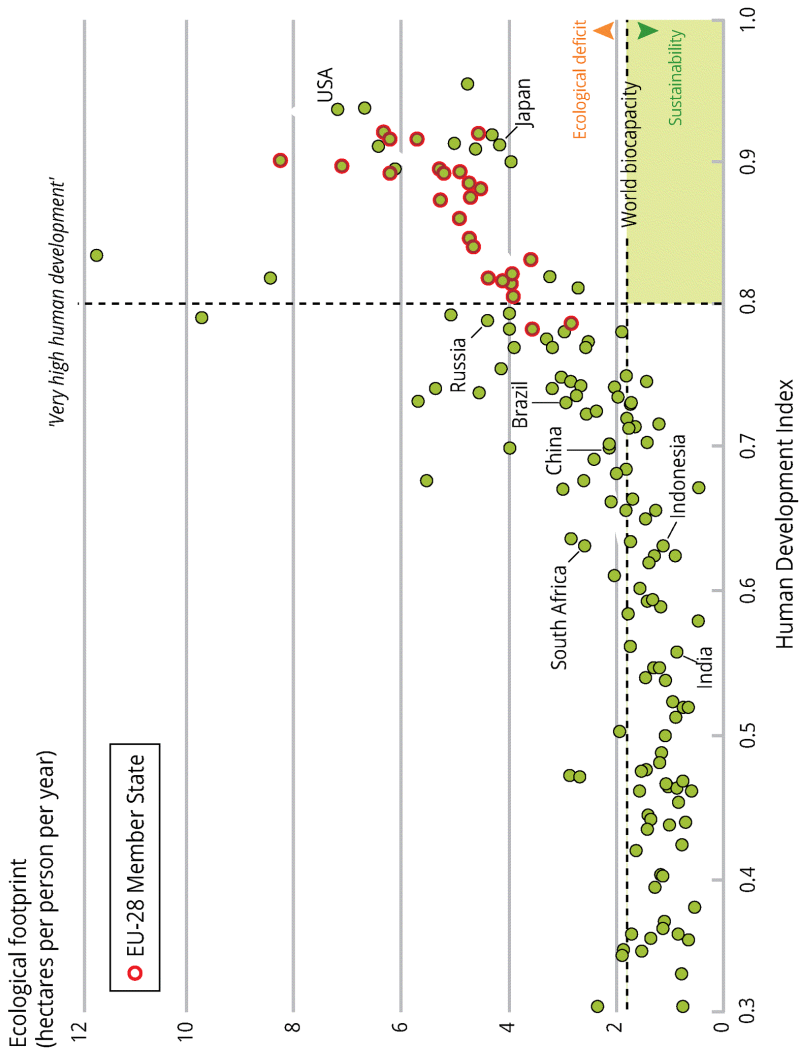

Figure 05. Ecological Footprint and Human Development Index, 2018

Cyprus in a way that few others can. This is so because of the need to be part of a shared island identity that ultimately transcends the identities of either the Greek or Turkish Cypriot ethnic groups underscoring the fact that there is ultimately more that unites the two sides than divides them. As such, sustainable development is a powerful unifying force. Any solution to the Cyprus problem must emerge endogenously and with reference to the specific needs of the island's inhabitants. Hence, sustainable development offers a unique opportunity to generate cooperation across the divisions in Cyprus by providing a potential template for moving forward toward peace and reconciliation.

Infrastructures of Peace

There are two ways to think about infrastructure, the first being quite literal to urban planning, and referring to the physical infrastructure upon which cities are built: structures, systems, and facilities serving the economy of a business, industry, country, city, town, or area, including the services and facilities necessary for its economy to function. Infrastructures are typically designed in such a way as to connect people to one another, and assist with the flow of goods and services. The value of infrastructure as a hallmark of good urban design lies in the creation and encouragement of multiple ties and connections between groups, enabling the free flow of interactions and commerce between them. Physical infrastructures are what enable communities to function. More significantly, physical infrastructures are ideally designed to support social networks and build sustainable communities. In Cyprus, the reality is quite the opposite. Peace, as an interactive process, has been severed by walls and checkpoints that isolate dynamic social networks between Greek and Turkish Cypriots.

Another way to view infrastructure is as a network of social relations that supports the effective use of the physical infrastructures. When John Paul Lederach first proposed the concept of an infrastructure of peace, he was referring to the macro-level political networks that guard against conflict and war (Lederach, 2012). Such a conceptualization referred mostly to a system of diplomacy that strengthened dispute resolution and helped protect against warfare as a means to resolve conflicts. If the infrastructure metaphor could be applied to the realm of peace and conflict transformation, an infrastructure of peace becomes a social

network that promotes dialogue and discussion between groups as a means to build relationships. These networks act as a buttress against war and reinforce peaceful coexistence and, ideally, support sustainable development.

At the core of the concept of an infrastructure of peace is the notion that sustainability recognizes and reinforces context-based resources for peacebuilding rooted within societies under change, as compared to external and often temporary support from the outside. In relation to the Famagusta Ecocity Project, an infrastructure of peace is integrally related to sustainable development. Indeed, the ecocity project creates a unique intersection between the physical demands of creating a city that is in alignment with all of the required elements of sustainable development -environmental, economic and social- and, with the process of getting there through an interactive and inclusive public deliberation. The process represents the first necessary component for sustainable development and conflict transformation.

Given these essential ingredients for sustainable development, the need for greater engagement that links to a long-term vision for a peaceful society is already a significant achievement of the Famagusta Ecocity Project. The project is providing a concrete vision and goal for community discussions, as well as a structure for budding dialogue between groups. This is important to conflict transformation and presents a unique opportunity for peacebuilding in Cyprus. which has been absent in a conflict that has been dominated for long by international and regional politics.

Planning and Conflict Transformation

Methods and approaches from conflict transformation and urban planning can be readily applied to managing the interface between groups within the context of conflict -as can process-oriented planning of the physical environment in the pursuit of sustainable development. In essence, both fields are concerned with participatory visioning processes about how things could come together for the creation of a better future for the city. A critical element of this approach is that all stakeholders have both the power and the resources to design and build a sustainable ecocity.

The value added from the two fields is a participatory process whereby conflict between groups be transformed by a collaborative governance and empowerment at the local level. The goal is to

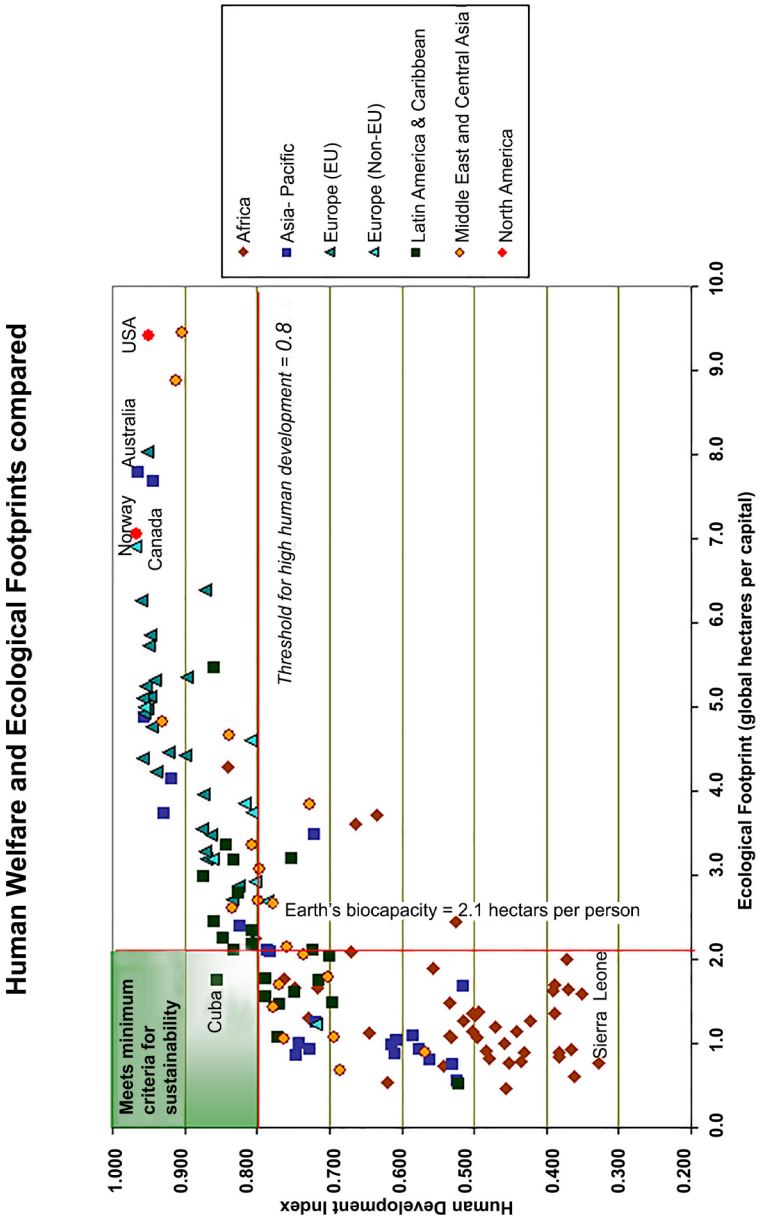

Figure 06. Human Welfare and Ecological Footprints Compared, 2018

effectively harness the power of participation and inclusion to address the root causes driving the conflict -not merely the symptoms- through participatory governance in the local planning. Best practices in urban planning or to be more precise, participatory planning, are derivative of approaches from conflict transformation. Specifically, participatory planning techniques use dialogue to secure consensus on planning and designing objectives. At its core, planning can be thought of as a form of deliberation utilized to engage stakeholders in a process that creates sustainable solutions in the designed environment that are responsive to basic needs while reestablishing connections between family and community networks to provide safe and secure living environments[1]. Typically, in a post-conflict setting these designs include re-establishing severed connections between stakeholders. To be sustainable on the social side of the sustainable development equation, solutions should be responsive to basic needs by reestablishing connections between family and community networks and by providing safe and secure living environments. Underpinning design plans are the inputs that inform them; namely, the importance of personal narratives from those that have the greatest stake in a planned future, the residents of the region, itself.

This is where the Famagusta Ecocity Project is making profound and significant contributions -not just in sustainable development, but also in pointing the way toward a peaceful and sustainable Cyprus. The Famagusta Ecocity Project combines approaches from conflict transformation and urban planning from both a conceptual and an applied level. As stakeholders work together to achieve a common vision that is sustainable, the role of participatory planning process is particularly important in achieving conflict transformation, and by extension, peace.

If participatory planning provides the design framework, conflict transformation provides the fundamentals of how to get there. Conflict transformation, as one of the many variants of conflict resolution, begins with the idea of focusing on the underlying relationships and social structures between people in conflict. The conceptual underpinnings of conflict transformation are powerful and put into focus relationships as a necessary foundation from which to tackle larger issues, such as sustainable development.

Relationships are tricky things under normal circumstances. When there are significant inequalities as a dominant characteristic of a relationship between groups, the potential for hatred, suspicion

Figure 07. Participatory Planning, 2018

and violence increases dramatically. Conflict transformation places relationships front and center as the key to building sustainable peace between groups in conflict, bringing practices like community dialogue groups, locally-empowered needs assessment teams, neighborhood planning forums, and public-private partnerships as tools to create empowerment and hope. In short, the approach from conflict transformation builds community based on networks that are connected to immediate problems. The interface between groups in conflict is a core area in which the principles of conflict transformation and urban planning can inform each other significantly.

Conclusion

The Famagusta Ecocity Project represents the convergence of two fields coming together to build community relations: conflict transformation and urban planning. Methods and approaches from these two fields are applied in tandem to realize a common vision for a just and peaceful sustainable development in Cyprus. For conflict transformation, a critical element is the notion of stakeholder participation and empowerment, particularly at the

local level and as a means to transform relations between members of the local community. For urban planning, the design process is a deliberative one whereby pragmatism and vision are reconciled through sustainable design and urban form.

If sustainable development in the form of the ecocity is the vision that unites the stakeholders, conflict transformation is the path to achieve the desired ends. Conflict transformation, as one of the many variants of conflict resolution places relationships front and center as the key to building sustainable peace between groups in conflict, bringing practices like community dialogue groups, locally empowered need assessment teams, and neighborhood planning forums as tools to create empowerment and hope. From a peace and conflict resolution perspective, any community-based programs that increase dialogue and constructive interaction between groups in conflict have the potential to transform conflict into something productive and healthy. As such, they help to move it one step closer to sustainable development. In short, the approach from conflict transformation builds community-based networks that are connected to long term vision -something that the Famagusta Ecocity Project has built in through its visioning for green infrastructure and sustainable development: another key contribution of the ecocity project.

The ecocity project has already achieved a great deal. Furthermore, it has done so in a setting that makes any accomplishment a significant one -a protracted conflict that has been frozen from forward progress for decades. The Famagusta Ecocity Project has made great inroads into a new model for peace and conflict resolution, all in the name of sustainable development. It has done so in an effort to balance historical preservation in the medieval city of Famagusta, to respect the right of return for inhabitants of Varosha and its environs, along with the need for economic regeneration in the larger Famagusta area. Whatever happens for the long-term efforts for sustainability on the island, ultimately, the Famagusta Ecocity Project's greatest contribution may be in providing a clear path forward for those that are trying to build a culture of peace and sustainable development out of the legacy of conflict and war. In so doing, it has laid the groundwork for a new model of peacebuilding through community-based sustainable development and urban planning, a model that is very much needed not just in Cyprus, but well beyond its borders.

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Figure 02. Source: https://www.fastcompany.com/40451569/how-u-s-cities-stack-up-on-the-sustainable-development-goals, 2018

Figure 03. Source: Quora.com, 2018

Figure 04. Source: Pinterest, 2018

Figure 05. Source: European Commission, 2018

Figure 06. Source: Global Footprint Network 2008 report (2005 data), UN Human Development Index, 2007

Figure 07. Source: http://designother90.org, 2018

8

A Transformational Process of Integration: Ecocity and Eco Architecture

Ceren Boğaç & Polat Hançer

Introduction

No one can deny the environmental problems we are facing today. The ongoing discussions claim that climate change is expected to reach catastrophic levels within thirty years. The environmental impacts of cities and their buildings -as the most important components of the urban environment- have begun to be addressed as indisputable facts among other environmental issues (Register, 2016). The need in finding long-term solutions for the future of cities, which will protect human existence as well as nature, have become crucial.

Architecture is a key instrument for sustainable development. From the pre-building (extraction, processing, manufacturing, transportation) to building (construction, operation and maintenance), and finally post-building (waste-management, recycle, reuse) phases, every architectural product affects the local and global environment. However, the inability of architecture to operate independently in the urban fabric, generally, causes problems of spatial meaning, problems of integration into the existing city network and even problems of integration into the local and global eco-systems. Sustainable design or ecological design refers to the philosophy of designing buildings that conform to the principles of social, economical and ecological sustainability.

The most important aspects of sustainable design are not only efficiency and conservation, but also livability and integration of the existing eco-system. 'Eco architecture' forms the core of sustainable design. It aims to use the most applicable material that will minimize negative environmental impact and seeks to reduce building energy requirements (Williamson, Radford & Bennetts, 2003). During recent years, eco architecture has become necessary and profitable for the international construction market. 'Green building' or 'Eco building' certifications and rating systems have been developed accordingly to demonstrate the users' commitment to sustainable environmental practices as well as lower operational costs (Meisel, 2010).

There is a mutual relationship between a city and its architecture. The role of each building for energy conservation, water conservation and material conservation is undeniable in the built environment. Within this context, a transformational process of integration between a city and architecture has become more important. One may easily claim that architecture alone cannot empower a greater ecological and social sustainability in any city if

the city does not provide opportunities for local resilience. In short, it is important to stress the reciprocal relationship between ecocity and eco architecture and furthermore, claim that one may not fully operate without the other.

In this chapter, firstly the ecocity framework, which is internationally acknowledged as one of the most sustainable and livable models of urban life, will be introduced. After drawing the general outline of ecocity principles, the concept and criteria of eco architecture will be summarized as an important instrument for a sustainable environment. Finally, a brief analysis of the city of Famagusta's current situation for urban sustainability and opportunities for the future ecocity and eco architecture practices will be discussed.

The Ecocity Framework

It is known that the ecocity framework first appeared on the world's agenda at the United Nations' conference on environment and development called 'Earth Summit', held in Rio de Janerio in 1992 (Downton, 2009). 'Agenda 21' was an outcome of the conference, which offered a sustainable development action plan (Meakin, 1992). After this action plan, the crucial need to re-design cities to increase their capacities to be self-reliant by empowering their own bioregions has been highlighted by several international experts. In the same year 'Ecocity Builders' was founded by Richard Register, right after the 'First International Ecocity Conference' held in Berkeley in 1990 (http://www.ecocitybuilders.org). 'The International Ecocity Framework and Standards (IEFS)' initiative was established in 2010 following those developments (http://www.ecocitystandards.org).

In 2011, 'An Initiative of Ecocity Builders' and the 'International Ecocity Advisory Committee' published "The International Ecocity Framework and Standards" as an attempt to develop international principles addressing the fundamentals of an ecocity. According to the initiative, the ecocity framework contains one primary 'ecocity urban design feature,' namely access by proximity; six 'bio-geo-physical conditions' of a healthy urban system, namely clean air, clean and renewable energy, nutritious and available food, responsibly-managed resources, and materials, healthy soil, and clean and available water; and finally, three 'ecological imperatives:' healthy biodiversity, carrying capacity, and ecological integrity.

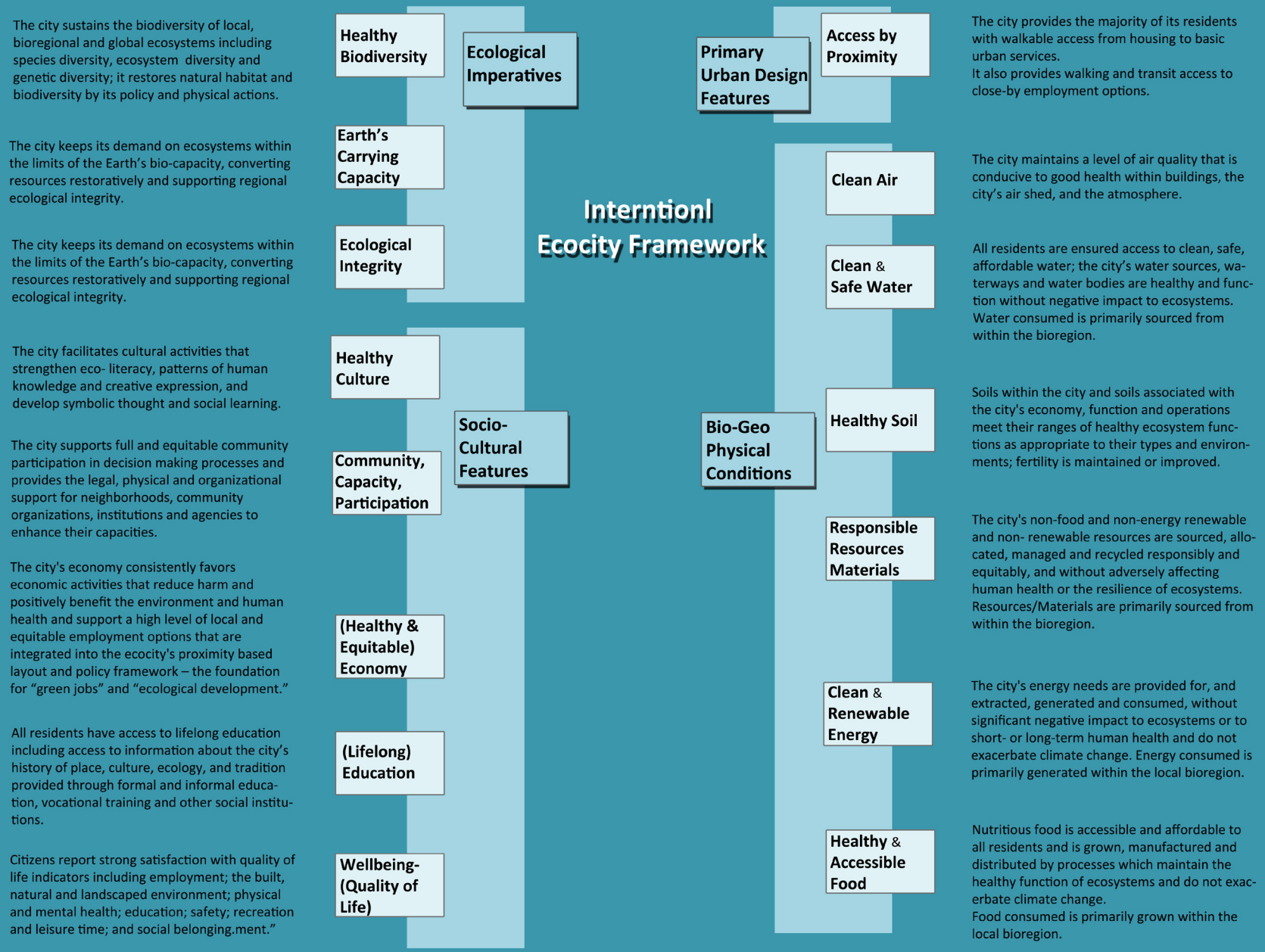

Figure 01. International Ecocity Framework and Standards: A city Meeting the Conditions Above has Achieved 'Ecocity' Status
(Converted into a figure by the authors, 2018)

Last, but not least, the five 'socio-cultural dimensions' for a healthy society are healthy culture, community capacity, lifelong education, healthy and sustainable economy, and well-being (See Figure 01).

The aim of the Ecocity Framework was to map a city's status from its current conditions to a greener city, an ecocity status and beyond. This framework was developed as a simple guide by international experts to provide basic information to the citizens (Figure 02), to evaluate the status of their cities and develop strategies accordingly.

Recently, many cities around the world have started to develop strategies and plans to transform into 'ecocities' by embracing the International 'Ecocity Advisory Committee's Framework', evolved over the years. Knowledge gained from other cities that achieved success in the application of ecocity principles, such as Curitiba in Brazil, Portland in Oregon and Freiburg in Germany, was also highlighted within the studies of the committee.

The Eco Architecture Framework

Architecture has a combined impact on the global eco-system. During the construction process of a building, site development disrupts the existing eco-system. The manufacturing of construction materials affects the global context. After the completion of the building, daily operations have an impact on the environment, such as toxic gases and sewage being the product of energy and water usage, effects of building maintenance etc. (Kim & Rigdon, 1998). Eco or sustainable architecture aims to find design solutions that have minimal impact on the environment in the long term.

Figure 02. The Ecocity Framework Charted from 'Unhealthy' through Multiple Levels of 'Greener city', 'Ecocity', and the whole earth level, 'Gaia', 2011

Figure 03. Eco Architecture Framework, Boğaç & Hançer, 2018

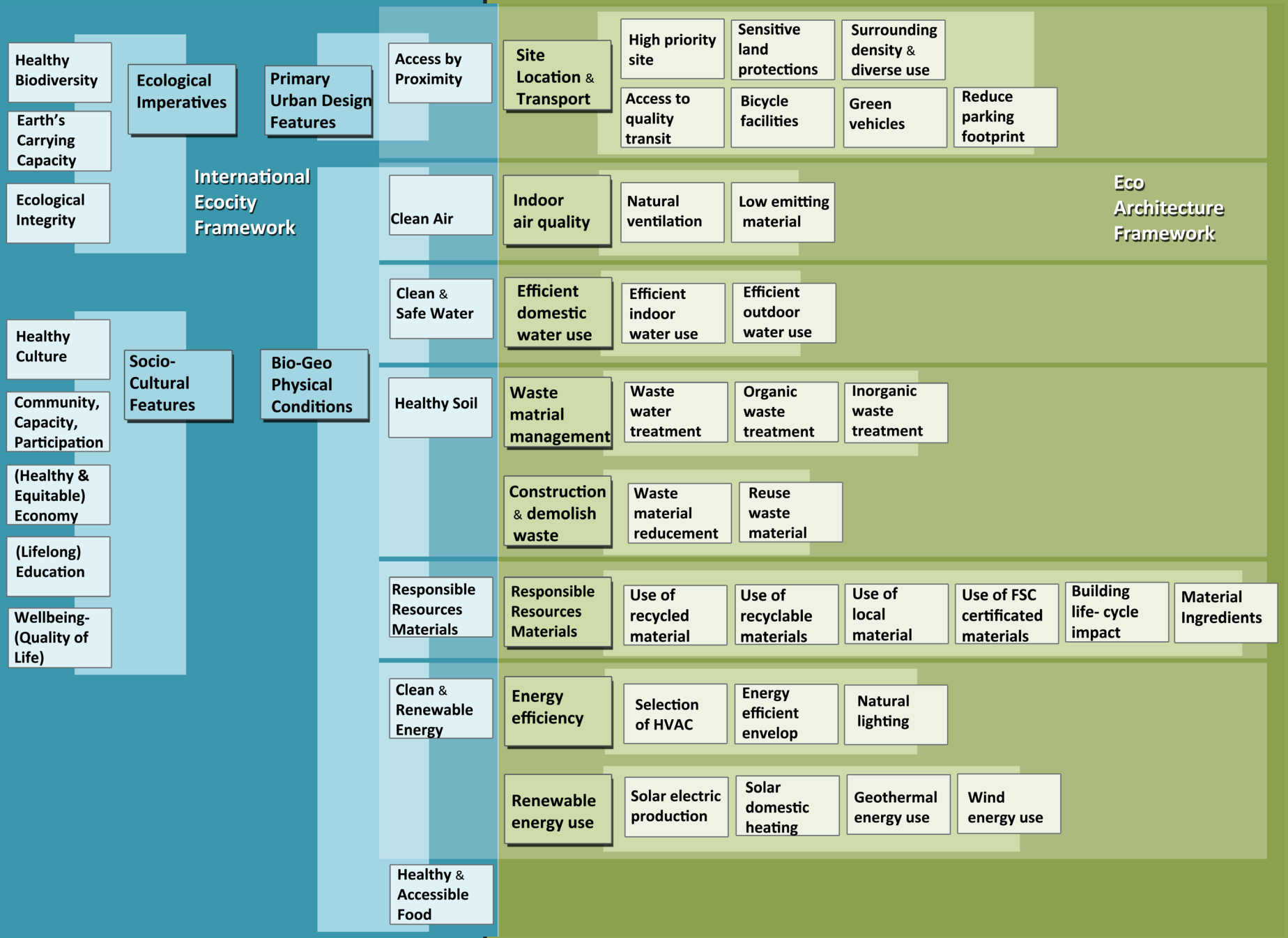

Figure 04. Responsive Relationship between Ecocity and Eco Architecture
A Developed Diagram by Boğaç & Hançer, 2018

An ‘eco’ or a ‘green’ building is the main implement of environmentally friendly or sustainable architecture (Williamson, Radford & Bennetts, 2003). The concept of ‘green-building’ is generally used in respect of the environment and to make efficient use of resources and services. An ideal eco-building, on the other hand, is to create clean buildings and make use of natural materials. Although there is a slight difference in the use of ‘eco’ or ‘green’ building terminologies, both of the applications aim to use energy efficiently (by increasing the use of natural energy sources), limiting water consumption, using recyclable and non-toxic material and generating as little waste as possible during the construction and operation processes (Pickerill, 2016; Yates, 2015).

There are different rating systems for the design, construction, operation, and maintenance of ‘eco’ or ‘green’ buildings. The Leadership in Energy and Environmental Design (LEED) is one of the most popular international rating systems developed by the U.S. Green Building Council first in 2000 (http://www.usgbc.org/leed). Before LEED, ‘Building Research Establishment's Environmental Assessment Method’ (BREEAM), was the first green building rating system in the U.K. (http://www.breeam.com). Recently, others have also responded with interest to eco buildings and additional rating systems have been developed. These systems, however, have generally remained at the local scale with national priorities. Compiled criteria to frame the sustainability value of eco architecture are summarized by the authors, in this chapter, in reference to the most widely used system, LEED, (Meisel, 2010) namely, site location and transportation, indoor air quality, efficient domestic water, waste material management, construction and demolition (demolished) materials, responsible resources/ materials, energy efficiency, and renewable energy use (See Figure 04).

As mentioned in earlier paragraphs, a building’s life cycle is composed of three phases as pre-building, building and finally post-building (Kim & Rigdon, 1998). Eco architecture principles seek to minimize the environmental impact of a building. In the following table, brief descriptions of eco architecture principles are provided:

The Responsive Relationship Between Ecocity and Eco Architecture

While eco architecture intends to respect the environment and use resources efficiently the question remains, could it be sustainable if

Site location and Transportation	*Site location and transportation are two items that cannot be separated from each other. Site location is required to support ecocity planning strategies and the selected site for building construction must consider the preservation of historic buildings and biodiversity that are exist in the context. Transportation criteria, on the other hand, refer to the integration of building with the public transportation and use of green vehicles. In this way the aim is to reduce the energy usage for transportation as well as the need for car park areas within the city. These criteria should be supported by the location of the selected site.*
Indoor air quality	*Indoor air quality aims to remove material choices that cause volatile organic compound (VOC’s) outgassing within the building and increase indoor air quality with clean air circulation. Within a city that does not have good air quality, it will certainly require an excessive amount of energy to provide clean indoor air circulation, which is not sustainable.*
Efficient domestic water use	*Efficient domestic water use requires the effective usage of water at taps, WCs, and other devices that work with water in the indoor environment. Moreover, it aims to reduce the usage of water by selecting effective garden irrigation systems. If the quality of the city water is of low standard, increasing the water quality to the expected level in the building would certainly require a high amount of energy usage which will affect the effective use of water as well.*
Waste material management	*Waste material management could be developed at the building scale by wastewater treatment, independently from the city. However, organic and inorganic building waste must be separated or decomposed first before being collected by the city’s waste collection network and treated at the recycling facilities of the city.*
Construction and waste materials from demolitions	*Construction and waste materials from demolitions refer to the amount of waste material that should be reduced during the construction stage of a building. It is expected that the waste materials in same construction site are reused or sent to be recycled.*
Responsible Resources/ Materials	*Responsible Resources/ Materials incorporates the use of local materials; specify building materials and resources that are sustainable, have low embodied energy and produce a minimal amount of upstream environmental impact; recycled materials use; use of recyclable materials and material ingredients for reducing the negative impact of the building materials on the environment. The use of local materials is directly related to the city framework; however other criteria could be applied independently at the building scale.*
Energy efficiency	*Energy efficiency aims to demand the use of energy efficient devices for heating, ventilation and air conditioning (HVAC) and lightning systems, and proper design of walls, ceilings and slabs that form the building envelope. Any building can be designed as energy efficient and independent from the city network. However, building density, building heights, street design and other variables of the city would certainly affect natural ventilation, thermal loss and heat exchange and lighting performances.*
Renewable energy use	*Renewable energy use suggests the use of wind, sun and geothermal energy in the buildings. Especially the use of photovoltaic panels could completely sustain the entire energy use of the building. Geothermal energy, on the other hand, could only be used when the building site meets the suitable environmental conditions. The use of wind energy is generally possible throughout extensive open land rather than at building scale depending on the strength of the wind. City planning strategies highly affect the direction of the building site, the amount of shadow caused by the surrounding buildings and usage of the site based on the density of the urban context. Moreover, they also affect the opportunities for the utilization of energy resources of the building.*

Table 01. Summary of Eco Architecture Principles, 2018

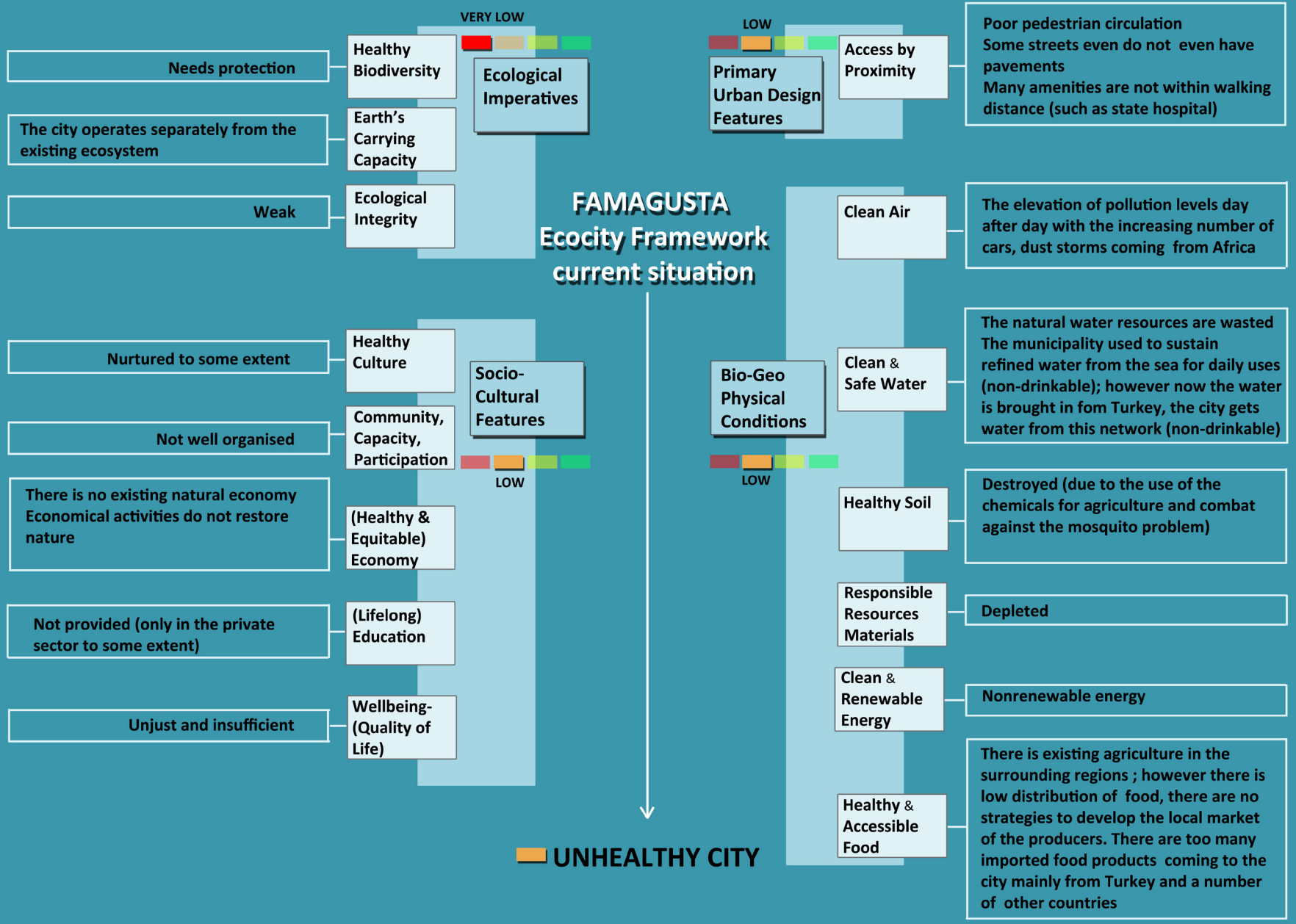

Figure 05. Current Evaluation of Famagusta City regarding the International Ecocity Framework, Boğaç & Hançer, 2018

it operates independently from the city network? An eco building will surely be able to reduce its carbon footprint. However, if an eco-building operates in a city that does not have ecological framework, this will directly affect its performance. For instance, a zero energy building will still reduce operating costs; however, the energy consumption will be increased due to lack of clean air in the city caused by traffic pollution. In such cases to increase indoor air quality the building will use a considerable amount of energy.

On the other hand, if the city does not provide sufficient pedestrian access or close proximity to basic urban services, the occupants' life will be dependent on vehicle transportation, even if the building is still considered ecological. For instance, if the city's transportation infrastructure supports bus routes, bicycle and pedestrian paths, the building could easily be situated as near as possible to existing networks, which would increase ecological aspects. Similarly, eco architecture will also have an impact on the sustainable development of the city. Waste material management during the construction process and selection of the responsible resource materials will surely affect pollution and toxicity of the soil.

In Figure 04, an attempt to highlight the responsive relationship between ecocity and eco architecture is given through the corresponding criteria.

Figure 04 shows that 'Primary urban design features' and five out of six other 'Bio-geo-physical conditions' of the ecocity framework have a reciprocal relationship between eco architecture criteria, and one without the other will not be efficiently sustained.

The Potential of Famagusta to be an Ecocity and Opportunities for Eco Architecture Practices

The city of Famagusta has a unique potential to be a progressive and desirable destination in the Mediterranean region. The city has a young and dynamic university student population, surrounded by a spectacular historic district of the walled city with a beautiful coastline and contains rich biodiversity. Conversely, today the city is facing many challenges in terms of sustainable physical and social resilience.

Before 1974, Varosha was the most active tourist hub of the city and mainstream of development. When this district became prohibited after the fragmentation of the island in 1974, not much development took place in Famagusta until the 1980s. Until 1986,

the growth of the city continued at the horizontal level, meaning no more than two story buildings were constructed. During the 1980s some cases of new development in housing occurred in the city and two 'Social Housing' projects in the Sakarya and Dumlupınar districts were developed by the central government of the northern territory. Between 1986 and 1990, vertical developments (apartment type houses) took place in the Karakol district because of its proximity to the Eastern Mediterranean University, which was almost empty before 1974. The second era of rapid development took place between 1995 and 1999 when the university student population continued to increase between these years with unexpected acceleration. Since the 2000s, the city growth expanded towards the settlements of Tuzla (Engomi) and Yeniboğaziçi (Ayios Sergios) that are two close suburbs of the city (Boğaç, 2010).

The development of Famagusta has been ongoing without any master plan. Sudden production of new housing units day after day causes the lack of water network, which should be provided by the Municipality. Water drainage and sewage system renewals have only been completed in the central districts of the city almost three years ago and still there are serious problems regarding these issues. Due to insufficient public transportation, the number of private cars is increasing in the city by the day causing traffic and pollution problems. The main street of Salamis (İsmet İnönü Bouvard) is not allowing any chance for possible enlargement with its two-way traffic on a single lane. This situation creates serious traffic jams and pollution in the city.

The Famagusta Port is another challenging issue for the city. Before 1974, it was the major commercial port of the island, which was holding a unique strategic location in the region. Today, the Famagusta port carries neither its importance nor capacity nor the maintenance to take back its role. On the contrary, today it has become a source of pollution. The warehouses constructed for keeping the goods during the British period are not accessible and they are in poor physical condition.

It is also not possible to talk about a healthy public life in the city, since there are almost no functioning public places. The small 'Pine Forest' planted during the British period (at the heart of the administrative district) is almost never used by any of the citizens. The potential places that could be developed as city parks, such as the United Nations camp located very close to the Eastern Mediterranean University, is composed of barrack structures that

are in extremely poor physical condition; the UN camp occupies a very strategic land region in the city that is only being used by UN forces.

Although Famagusta is a coastal city with unique sandy beaches, there is almost no direct access to the sea from the city center; the coastline is blocked by either Port Authority activities or by military zones. It is not possible to talk about any waterfront improvements in the city after 1974; however, the former developments were also known to be problematic. Densely developed high-rise hotels and apartment buildings in the prohibited section of Varosha used to block the sun, the view of the plots behind or buildings from sea breeze. Today, most of those structures are subject to water erosion because of the increased sea level in some parts of the coastline and have turned into bird habitats over the last forty years.

Another challenge is the complete lack of ecological integrity within the city. Currently there are three unique eco-systems in the city:

1. The Ayluga Lake, which is an artificial lake constructed during the British period and surrounded by large Eucalyptus trees, divided into two by the new Nicosia road; it contains university buildings at a very close proximity (almost in it),

2. Wetland in the Karakol district is partially located in the limits of the prohibited military camp, which is frequented by flamingos,

3. Unknown natural life in the fenced-off Varosha district spanning more than forty years of human-free natural habitat.

The main question here is how to support the ecological diversity if no strategies are to be developed in the future.

In short, the main challenges for Famagusta are basically the fact that there is no master plan, there is insufficient infrastructure services, problematic transportation network, lack of pedestrian or bike lanes for safe circulation in the city, no public parks or gathering areas, no water front development or continuity, no strategies to protect and integrate different ecosystems within the city.

While considering the current challenges that the city of Famagusta is facing today, the following analysis under the ecocity framework could be presented as follows:

Currently, Famagusta may retain the status of an unhealthy city. However, the city has a great potential to become transformed into a sustainable city. Specifically, the fenced-off section of Varosha provides a unique potential to develop innovative practices for ecocity and eco architecture development. Some of the opportunities

are listed below, and many more could be added to them:

- The walled city of Famagusta fulfills the requirements to be a UNESCO world heritage site, if the political obstacles are overcome. The rich historic context provides many opportunities for the development of socio-cultural features of an ecocity.

- The presence of the Eastern Mediterranean University is another strength for the city -not only for academic or professional purposes, but also by contributing to the city's economy, culture and social life. It could easily be an ecocity regulator.

- A continuous and well-planned water front development is possible since the city has the longest continuous beach line on the whole island.

- The Famagusta port can easily be turned into an environmentally-friendly marina since it no longer maintains its level of importance for exports and imports.

- The settlements that are close by, such as Yeniboğaziçi, can provide healthy and accessible food to the city with holistic development strategies under the ecocity framework. Moreover, the agriculture in the city center could still be possible at Kato Varosha to a larger extent.

- The city's unique eco-systems (wetlands and species inhabiting the fenced-off Varosha district) could also be integrated to enrich biodiversity with well-researched approaches.

- The fenced-off Varosha district has many vacant plots and areas that could allow for change with regard to eco architecture practices within an integrated ecocity framework. Moreover, the existing material stock of the abandoned buildings could be recycled for future construction development.

- Due to the scale of the city, it could easily be converted into a pedestrian-friendly place and the usage of motorized vehicles could be reduced.

- Famagusta could be a bridge between East and West on a global scale, as it was before, and could well be Europe's first ecocity model.

Conclusion

As a conclusion one can argue that ecological design must be grounded in an inclusive view of the building and cityscape, accordingly. User demands based on the desired level of comfort (such as indoor air quality, thermal comfort, visual comfort based

on daylight and artificial lighting levels, acoustic, water use etc.,) in any building affect energy consumption. The construction, maintenance and demolishing process directly affects ecological cycles. The urban development and infrastructure, on the other hand, influences the environmental response of a building. While environmentally friendly construction practices support sustainable cities, sustainable cities reduce the impact of buildings on the environment and empower the performance and operation of ecological buildings.

Recently, scholars and professionals in Famagusta have embraced promising developments for the application of eco architecture principles. Moreover, a pioneering Famagusta Ecocity Project (FEP), that envisions Famagusta to be a beacon of peace and sustainability for the region and a model ecocity for the world, has been embraced by an extensive number of multi-communal workgroups from across the whole island. This chapter aims, therefore, to provide an insight on the reciprocal relationship between eco architecture and ecocity and to stress the need for developing integrated eco architecture and ecocity strategies, correspondingly. Our traditional understanding of making architecture and cities must be transformed into constructing integrated and sustainable living systems.

As Turkish poet Nazım Hikmet Ran, once wrote:

"To live…
Like a tree alone and free
Like a forest in brotherhood"

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Figure and Table Sources

Cover photo by Baki Boğaç, 2017

Figure 01. Source: International Ecocity Framework and Standards, an initiative of Ecocity Builders and the International Ecocity Advisory Committee, 2011

Figure 02. Source: International Ecocity Framework and Standards, an Initiative of Ecocity Builders and the International Ecocity Advisory Committee, 2011

Figure 03. Source: Developed from LEED rating systems, 2011

Figure 04. Source for International Ecocity Framework and Standards: An Initiative of Ecocity Builders and the International Ecocity Advisory Committee, 2011; Eco Architecture principles developed from LEED Materials: A Resource Guide to Green Building by Meisel, 2010

Figure 05. Source: Ecocity Standards taken from an Initiative of Ecocity Builders and the International Ecocity Advisory Committee, 2011

Table 01. Sources: Yates, 2015; Meisel, 2010; Bauer & Mösle & Schwarz, 2010; Kim & Rigdon, 1998)

9

Place-Specific Design

Armando Garma-Fernandez

Knowledge of a Place

Back when humankind was still wandering the earth living as hunter-gatherers, these nomadic people lived either out in the open, unprotected from the elements, in portable housing, or in whatever natural shelter was available, such as caves or under the canopy of trees. Wherever the food went, they had to follow. Therefore, being able to move quickly and efficiently was of the utmost importance.

Since the existence of nomadic people was by nature mobile, their construction methodology had to reflect this mobility. Construction was made mostly of light materials, and what could not be carried would be stored to possibly be re-used at a later date. The connections between materials were not permanent, in fact, they had to be able to be disassembled quickly and re-assembled later, just as easily.

The leap from a hunter-gatherer society to that of an agricultural society brought about huge changes to the lifestyle of these people. This transition did not happen overnight. There must have been many mistakes, much trial and error, and divisions between those who wanted to stay put and those who wished to continue following the herd. In any case, there must have been many discoveries and tremendous victories, the repercussions of which we are still experiencing today.

Since an agricultural society is no longer a migratory society, it needs to harness the most that it can out of the place chosen as homeland. By sheer necessity, an agricultural society has to know all of the intricacies of a single place, for its survival is at stake. Just like getting to know a person very well, getting to know a place takes time. Knowledge of a place allows one to exist relatively stress free, quality of life increases, and desire to leave decreases.

Once a society has transitioned from a hunter-gatherer to an agricultural society, the people have much more time on their hands to pursue other activities. Over time, many individuals shift from hunting to farming to other pursuits, such as specializing in the construction of structures or other trades. This specialization in construction occurred because the need for a permanent homestead required specialized knowledge. People were now required to find, manipulate, and assemble the right materials and use them in the correct way, but to also familiarize themselves with the land, the environment and all of its attributes and hazards.

These specializations were all achieved through trial and error and through knowledge gained from this experimentation. This was,

Figure 01. Inuit Summer Homes, 2018

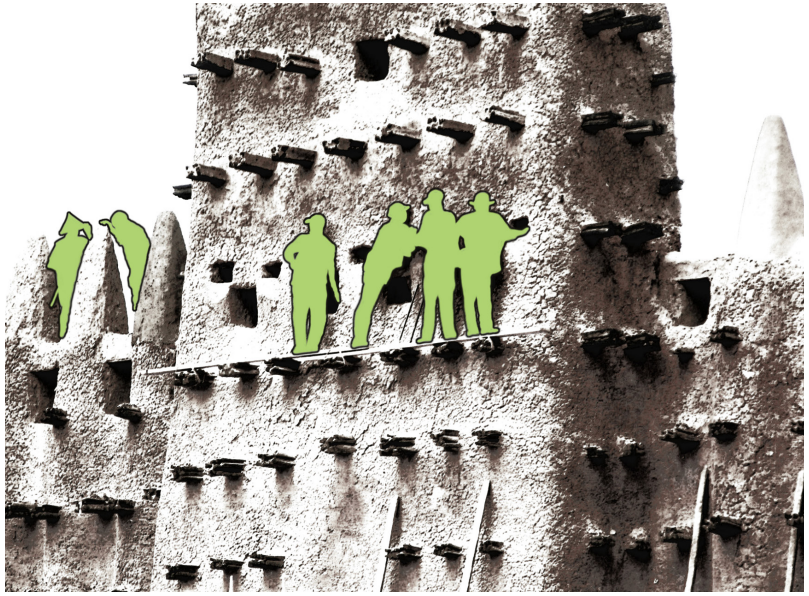


Figure 02. Mudbrick Castle, 2018

in turn, handed down from generation to generation because of its immense value. Useful construction materials must have been hard to find and therefore were of great value. The knowledge of what material to use, where to find it, where and how to place it on the landscape, and how to protect it to make it last, was of even greater importance.

This collective construction knowledge, varied from region to region and from society to society. Over time, this accumulation of knowledge of local materials, along with local climate in its best uses and applications led to the birth of local architectural language and of cultural traditions that made different societies unique.

Machines for Living

We can think of this localized architectural language, this vernacular language, as the tricks of the trade needed to survive in one place with the best materials available assembled in the best way possible as dictated by the land and the local weather. A perfectly localized construction language would act in harmony with the elements and not in arrogance against nature. A perfectly localized construction would only work in a certain place or region. A building suited for life in the wilderness of northwestern Canada would be completely different from the perfectly localized construction that is best suited for the tropical weather of the Caribbean not only because the needs and the climate are different, but also because the local materials vary greatly.

There is really no reason for a uniform construction language around the world. The needs of all societies are different, the local materials available are different, the local climate is different, the angle of the sun is different, and therefore, the human response to these elements needs to be different. It would be as outrageous to build a log cabin with a high pitched roof to shed snow and a giant fireplace in Mumbai as it would be to build a light, breezy, open structure with no source of heat in the high slopes of the Swiss Alps. However, for the vast majority of the world today, this is not the case. More and more we share a common construction language, materials, and methodology.

We can travel to almost any corner of the world today and find the same type of construction being repeated over and over again. After the industrial revolution, a day came in our history when fossil fuel energy became cheap, and converting our buildings into

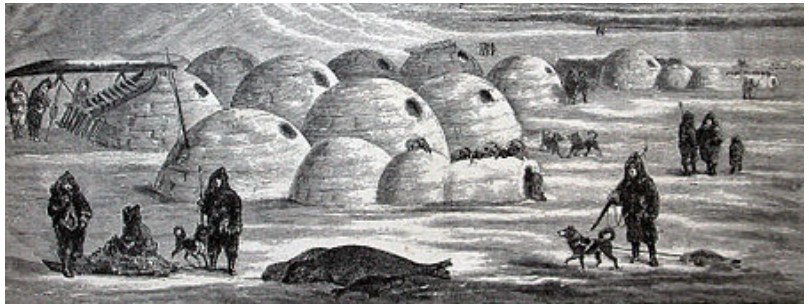


Figure 03. Community of Igloos, 1865

Figure 04. Vernacular Architecture, 2018

“machines for living” was seen as the way to live as a modern society. When that day came, we stopped seeing buildings as our intermediary, our means of co-existing with our unique natural surroundings, and instead began treating construction as the way to impose our will as humankind upon nature. We replaced thousands of years of culture and construction knowledge with fossil-fuel-powered, energy consuming boxes that say nothing of the local cultures that inhabit them. We discarded generations-worth of local construction knowledge as old fashioned, or as out of style; in our arrogance, we ignored the natural elements by making our built environment completely dependent on electricity.

This decision to live in a way in which electricity is the solution for everything showed an incredible lack of foresight. It led humankind to toss aside not only the local knowledge of construction but also the way of living in harmony with our natural environment. We began to live instead in open defiance to nature. These unbelievably poor decisions have finally come back to haunt us; now, it is up to us to remedy the situation. How could we have ever thought that tying humanity's future to a resource that was not only going to disappear, but also get exponentially more expensive the closer it came to an end was a good idea?

This move towards electrified, power-driven "machines for living" has played a large part in our rapidly warming global climate. Had we not turned our back entirely on local construction methods and instead used electrical power to assist life rather than rule over it entirely, then perhaps we would not be looking at global warming, climate change, and the rapid decline of biodiversity on the planet as the harsh reality of the day. The fact that we are the most dominant life force on this planet does not free us from being completely dependent on it. Rather than continue to live in this arrogant manner we should take the lessons of our local, vernacular construction heritage and then augment and support these techniques, not replace them, with electrical means.

To see a building wrapped entirely in glass constantly heated by the sun shows complete disregard for the sun and it effects. Humankind should find the areas where it has not, or is not, utilizing nature's renewable bounties. We should find the areas where our actions are devastating the natural order and find sustainable alternatives. I am reminded of the Hippocratic oath that all new physicians are required to take. They may just be words but their message is clear: "Do No Harm". Perhaps it is time that we require that all the people responsible for developing our built environment as well as those in every area of the consumer products industry take this oath as well.

It would be one thing if by turning on the air conditioning that the heat in a space just magically went away without any further repercussions. However, this is not the case. By turning on the air conditioning, a machine is put into action by electricity, and this machine then makes the space cooler through the use of energy. This machine, as a byproduct of its work, generates heat. That this heat is being released into the world outside the space being cooled does not mean that it does not exist. Furthermore, the electricity

that this machine uses came from a facility that burned fossil fuels to generate the electricity; in other words, the electricity itself already created heat and waste. Just think of all the extra heat that is being generated elsewhere to make a space cooler, after it already got hot.

Figure 05. A Modern Glass House, 2018

This unwanted heat in our inhabited spaces is being generated not only because it is summer, or because the designers and developers who made this building space possible chose to ignore all passive means of design, but it is also being generated because of the lifestyle choices of its inhabitants. We are all lazy by nature. We will expend the minimum amount of our own personal energy to get the most benefit possible. In our anthropocentric view, we only feel the relief from the coolness and are thus satisfied and content without pondering the ramifications of our comfort any further. We were hot, and now we are cool.

Unfortunately, most people are not capable of thinking beyond themselves when faced with the choice of bearing some discomfort or turning on a switch to transform their living spaces into some

idealized artificial climate. We have all grown up in the era of electrical convenience. There is nobody alive today who can claim to have been alive before electricity. There are many people out there who are not raised to think about getting warmer or cooler in terms of adjusting their clothing first, or opening or closing a window first, but are taught instead in terms of hitting a button, turning a dial, or sliding a finger across a screen to have every wish come true. We are grand-children of the age of convenience taught by those who have already forgotten how to do things by passive means, those who have ignored their connection to nature.

By passive means of design, we mean all the tricks and local knowledge that we referred to earlier. Passive design methodologies differ from region to region and from culture to culture. Any means of design and living where energy is not used to solve the problem, is a passive means. Any means of design and living that depends on energy to function is, therefore, called active. Since the industrial revolution, humankind has become more and more dependent on active solutions to carry on life's daily necessities. We have invented new things, machines, and ways of living because of energy availability and in the process, energy consumption has become a way of life. We are all in dire need of an education on how to live while reducing our energy use needs. I include myself in this discussion.

I am writing this, not by my own hand holding a pencil and writing out each word, but instead from a complex machine powered by an

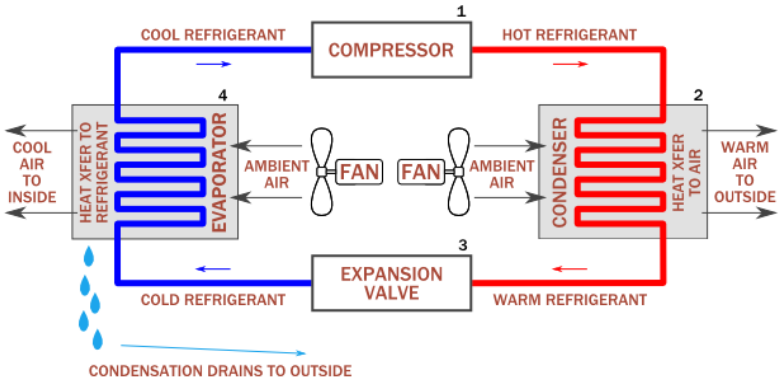


Figure 06. How Air Conditioners Work, 2018

energy source that was harnessed many miles away. If we were to take into account all of the electricity that has gone into the entire process of writing this article, then each word that I am writing is taking up much more power than if I had written it out by hand. I am not even storing this typed information locally; instead, these words are being beamed elsewhere, via a larger electrical network, over cables that cross entire continents and oceans, to a final storage facility that I will never see. These words will be housed, instantly, in a facility the location of which I do not even know; yet I am sure that it is so far away that the cost of the land under and around it is inexpensive enough to house a farm of computers cranking out heat that will not be used to warm anybody. There is not even a guarantee that this information will be accessible forever, or that I am the only one who really controls the ownership of this information. However, this method that I am currently using, via a computer connected to the internet, has an immense advantage in the fact that I can instantly share this information with a vast number of people anywhere on the globe. Had I written it out by hand, I would have only shared that information with a sheet of paper and nobody else. I have traded some intimacy and connection with the material for the convenience of immediacy and global access.

Wasteful Living

We could point fingers at the way that societies in the first world live and say that this is the way that life is led today. We could also say that not to live in such an energy-consuming manner would be depriving us of things that are not just modern day comforts but absolute necessities. We could say that a developing nation is forced to keep up with the consumption and lifestyles of other countries because by not doing so, it would put them at a disadvantage in an age where competition is global. To make these arguments, however, shows the same lack of foresight that led humankind to the mistake of living a life completely dependent on electrical power solutions in the first place.

To acknowledge that we consume too much electricity, or that we are living in a built environment riddled with flaws does not mean that the complete opposite swing of the pendulum is the correct answer. To agree to find ways to lessen our dependence on energy for our way of life is not to regress to a medieval way of living where children had to learn to read by candle light. If we could

all find a way to live in a way where we compromise some things for others, or obtain our energy through different means, then we could conceivably rewind the damage that we have caused our planet with our actions. It would not happen overnight, but it would begin to happen, slowly.

This would not require a huge change in our way of living. Some small changes can have an enormous and lasting effect. If we could move towards a lifestyle in which we alter how we build, where we build, and with which materials, we would make great strides toward a future where we are in balance with our energy consumption, and in which our impact on the ecosystem is lighter or maybe even non-existent.

To begin with, if we merely recognize the inherent value of all materials and learn to recycle as much as possible, this would be a tremendous stride toward less waste and less energy consumption. Such a small step would begin to alter the path of increased global warming that we are currently on. But why stop there? In the United States, the model country for wasteful living, the vast majority of material that ends up in landfills come from construction waste. Why is this fact important? It is important because the global trend is to follow the American method of construction, which is unbelievably wasteful. Recycling material of all types, not just construction material, should be of great importance to all societies. If a building

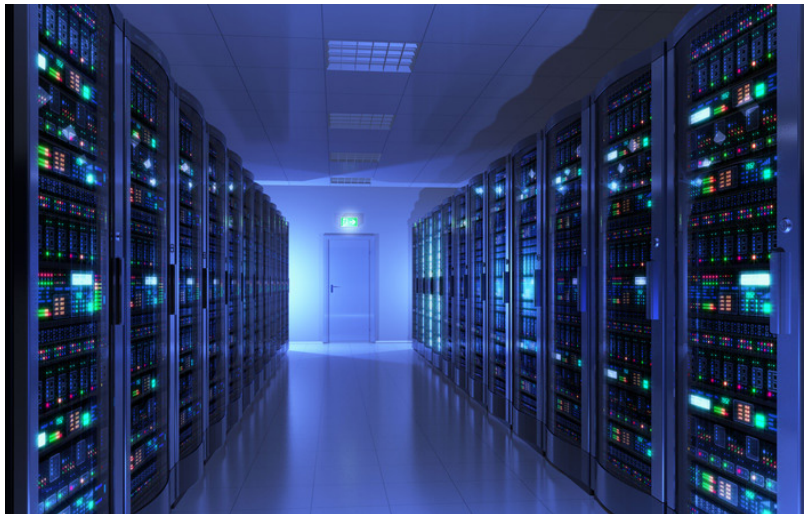


Figure 07. Data Center, 2018

is to be demolished, or altered significantly, and material is to be removed, then why not take the extra bit of effort and see what is salvageable and reusable? There have already been great amounts of energy spent in making this material.

The reasons behind this wastefulness are many and one is the shift in construction cost from material to labor. It used to be that material was expensive and labor was cheap. With cheap labor and expensive material comes competition, with the focus of the competition being who has the greater skill and ability at working with the material. This was the case for most of our human history when we worked with local materials and required local expertise. Because material was more expensive, it had to be more durable. Buildings were built by master craftsmen and they were built to last for centuries. Now, sadly, the dynamic is the opposite, the material is very inexpensive and labor is what is expensive. There is no incentive for treating construction material as something precious. What becomes precious is the clock, the time spent by laborers putting up the material, and the time that it will take the future tenants to move in. The competition then becomes about who can put up the shoddy construction material as fast as possible, with the least expense incurred in labor.

Anyone who has been through a modern construction site will realize firsthand just how much waste is being generated. The more time spent in the construction process the less money will be made by the developer and the tenant who cannot occupy the space. The final assembled buildings are made of very low quality material manufactured and imported from very far away and assembled in haste. This finally results in buildings whose life expectancy is measured in decades, not centuries, which is unbelievably wasteful.

Globalization has also led to the standardization of construction in both the materials used and how they are put together. If the cost of labor is high, then the material used needs to be not just cheap but as cheap as possible. In the existing paradigm of construction, the most inexpensive building material is not going to come locally, it is going to come from wherever in the world the labor to make this material is the absolute cheapest. This is going to be from nations where the environmental safeguards and standards placed on industry are the most lax, the levels of safety in the workplace are the least, and the cost of energy is the lowest. This is only possible in countries with cheap energy as it would be too expensive to manufacture and transport. Again, in our current construction

climate the cheapest energy is also the dirtiest and most polluting.

Additionally, globalization means that construction material is standardized on a global scale, and if the time required to assemble this material needs to be as fast as possible, then the variety of building methodologies and spaces that can be made need to have the least amount of variation as possible. That is why we now live in a world where a building in Scotland can look like a building in Saigon. The existing construction paradigm and the relatively low cost of energy have allowed this to happen. Our unique cultural traditions are being erased in front of our very eyes, all in the name of profit.

One could easily make the argument that this has led to our obsession with luxury items as status symbols. If we are unable to display our culture, our personality, creativity, and uniqueness in the way we live, that is, in our built environment's relationship to the natural environment, then we are only left with filling these homogeneous spaces with things that convey a message. If all spaces and buildings around the world look the same, then we are only left with the wallpaper and the stuffing for variety. If all we have are empty soul-less boxes, then all we can do is to fill them up with stuff.

Reclaim Our Places

So how do we combat this cultural homogeneity? How do we reclaim that which is our own but was taken from us so long ago? How do we begin to express ourselves in a language that we do not speak? How do we use this language in a way that suits the needs of today? How can we do this and live in a manner that conserves energy? How can we put culture back into construction? Is there a way to do this and remain a competitive part of the modern world? Of course there is, and it is a path that we must eventually take at some point in our future. The choice we have is whether we want to embrace this path, this life choice, and make it our own now, or have a form of this path forced upon us in an emergency.

We begin going down the path by recognizing the value of energy, not just the energy that we are currently using, or are about to use by our direct electrical consumption, but also the energy already spent in the manufacture of goods and materials. Any energy spent in making something, should be appreciated, and possibly reused. We should also take into account how much energy goes into the

Figure 08. Stonemasonry, 2015

Figure 09. Construction Waste, 2015

manufacturing, packaging, marketing, and distribution of products. This is called a product or a material's embedded energy. It is the total accounting of all the energy used in making a product; it is important information to consider, like calories on food, so that we can be aware of what is being used in the maintenance of our daily habits.

Next, we must recognize that we control our own path to energy independence. Just as it would be ridiculous to try to sell ice to the native peoples of the North Pole, it should be just as ridiculous to use fossil fuels to generate electricity in place where there is a bountiful, free alternative whether it be, hydro, geothermal, solar or wind generated. If I were being forced to pay for my electricity from an entity -be it a corporation or a state-run monopoly- that insists on burning fossil fuels without so much as considering the alternative sources that might be more economical for me, the user, because it might interfere with that entity's profit margin, then I would be more than dissatisfied. In fact, I would be quite angry.

From there, the next step is to re-educate ourselves as to our immediate connection with our natural world, and the power that we have to alter, customize and personalize the experience of our immediate built environment's relationship to the natural environment. Our homes should be seen as the next extension to our clothing and, as such, they are a very personal thing. We would not expect someone else to dress us or to tell us what to wear. How dare they? We need to reclaim ownership over our homes as the

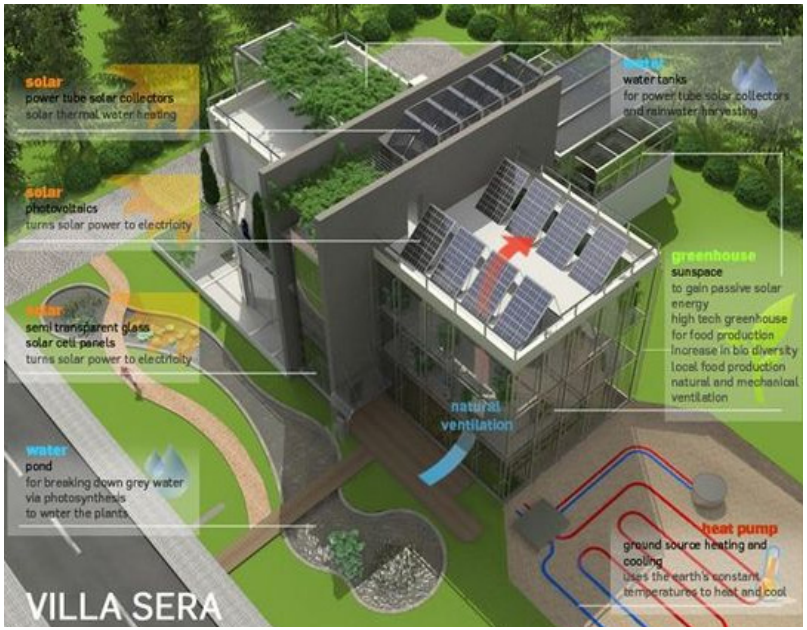


Figure 10. Villa Sera, An Airy Solar-Powered Greenhouse Home, 2012

places where we live as individuals. This idea of place is very important, as are the unique characteristics of a place that differentiate it from other places. We should take the time, as residents of a place, to figure out what it is about this place that makes it beautiful and unique. We need to reclaim our culture.

A place like Cyprus should have a very deep, architectural language, as the island is culturally diverse, with a rich history and a varied climate. The island has pine-covered mountains that get snow, as well as beaches that remain mostly warm throughout the year. However, what Cyprus has the most of is sunlight, when over three hundred days out of the year on average are sunny. With the technology available to us today with solar panels and photovoltaics, this is the equivalent of gold raining out of the sky and begging to be collected and stored. While Cyprus has an abundance of sunlight, it definitely lacks water. It is a dry place where water should not be wasted. While there is a rainy season with snow on the mountains in the winter, the island does not have such a regular supply of rain that it should consider water as something to be taken for granted or wasted. Since this is the case, then why is so much construction on the island done in concrete? By its very nature, concrete is a material that requires large amounts of water and it should not be used as the main construction material in such a dry location. Perhaps an alternative to concrete could be used, or if concrete must be used, then perhaps an alternative source of water could be utilized that would not interfere with the island's fragile supply of drinking water.

The elephant in the room is the Cyprus problem and how this all relates to it. Should there ever be a solution to the Cyprus problem then some of the many issues that will have to be taken into consideration is the return of the captive sector of Famagusta -Varosha and its surrounding districts- as well as what to do with the city once it is returned.

Many say that the first step toward reconciliation should be confidence-building measures, like returning the Varosha district of Famagusta and its environs to the displaced Greek Cypriots who were forced to leave their city behind, more than four decades ago. Others believe that Turkey is incapable of returning Varosha without any preconditions. Regardless of their viewpoint, there is a palpable energy and excitement over the possible return of Varosha, an excitement that most on the island can't recall experiencing in their lifetimes. However, to us this possibility is loaded with very serious

questions. How would a return of this section of the city that has been kept empty for over 40 years be handled as it unified with the rest of Famagusta? What are there opportunities here and how can we avoid mistakes committed in the past?

There are many who for decades have dreamed of returning to their home. Some will surely want to recapture the magic of their youth, yet some may never want to set foot in the area again. It is our hope that through our efforts there will be many who will want to return in a productive and responsible way. It is our project's aim to see that when Varosha is returned, that all citizens of Varosha and Famagusta, both Greek-Cypriot and Turkish-Cypriot be informed, and prepared to deal with, the realities of moving their city into the future as an ecocity and not repeating the same energy-hungry mistakes of the last forty years plus.

Creating an Ecocity

So how does one go about creating an ecocity? Recently, my wife, Vasia Markides, an artist, activist and documentary filmmaker was asked to give a TedX talk about the work that we are doing as part of the Famagusta Ecocity Project (FEP). The theme of the conference was "Everything You Know Is Wrong". That theme resounded very

Figure 11. Cyprus Vernacular House Detail, 2018

much with us because that is precisely what we are trying to achieve, in essence, with our project. Our first goal is to pass the message to the Famagustians that the best way to live for the future is not by looking back at how things were done in the past. Our project is, first and foremost, trying to convey the message that we need to learn how to live peacefully and in close collaboration with our neighbors presented as our enemy. This is not a wise approach for a country to follow particularly since it is so very eager to move away from its colonial past and prove that it now belongs to the European Union, as a modern European Republic.

First, you have to get past the notion that an ecocity can be a feature ordered out of a catalogue and tacked on to a regular city like wallpaper; a few solar panels here and there, a few herb gardens on rooftops, or some token trees on the balconies of buildings and 'BOOM', you have an ecocity. That is not the case. The issue is much broader and the solutions are going to be both far-reaching into the fabric of the community but also unique for each individual building. An ecocity is not just the built environment, but also the will of its inhabitants to live in a peaceful and sustainable way.

Second, we must get past the view of an ecocity as a monolithic object that lies isolated and pristine, like a statue to ecology in a field of wastefulness. An ecocity must act as a hub within a region, like the center of a spider web whose strings spread wide. When Varosha is finally returned it must be seamlessly re-woven into the fabric of Famagusta, the city that has continued to live during the last four decades while a section of it fell into decay because of abandonment. Varosha, cannot be revitalized into an ecocity all by itself. The entire city of Famagusta and its surrounding suburbs must follow suit in its transformation into an environmentally sustainable, peaceful, and energy efficient region. If that were not our goal, we would only be creating yet another divided city in Cyprus.

It may seem natural to believe that most of the buildings that were trapped in this city, forty plus years ago, are not salvageable and would need to be torn down. Many buildings will have to be torn down, however, we must remember that the greenest building is one that is already built because the energy to build it has already been spent. This poses a whole series of questions: which buildings can we pick to save regardless of their deterioration? If a building cannot be rescued how do we deal with all of its demolition waste in a responsible way and can the waste be reused? How do we combine the residents' desires to recapture exactly what they lost

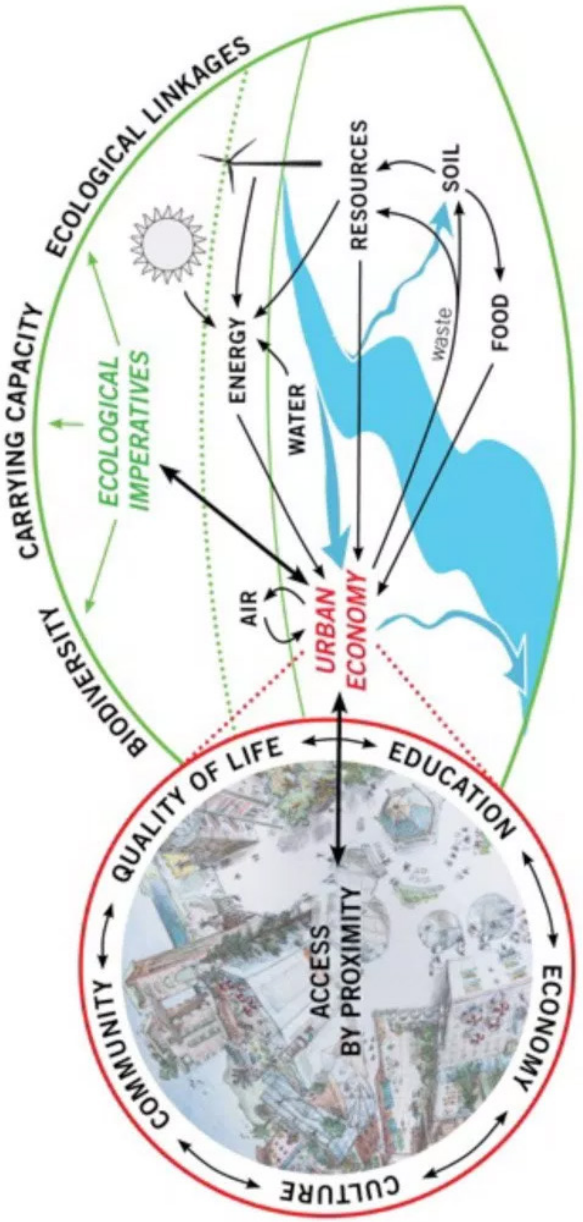


Figure 12. What is the Ecocity, 2018

so many years ago with the world's dire energy crisis of today? How do we weave the concepts of permaculture into the intended reconstruction? There is no way that we alone could rebuild an entire city, nor do we intend to do so. Instead, we need to inform the citizens about a wide array of environmental principles and then provide them with the tools necessary to make them a reality.

Third, this is not just a construction problem. This is a resource allocation and self-sufficiency problem also. All one has to do is look at the fact that Cyprus imports most of its food from elsewhere. For Famagusta to become a true ecocity it must be energy independent, not only in its housing energy needs, but also in its food needs as well. What good is it to save energy on heating, cooling and electricity in general if it is paying a premium just to be able to feed itself?

More than anything else we have found that by far the most important step in creating an ecocity is to rally the support of the people who are going to benefit the most, in this case the stakeholders. Without a grassroots base of support and belief in the project we are recommending from those supporters, nothing can be achieved. This is especially true in a situation where there is pressure from a very large base of individuals who have been waiting the majority of their lives to return "to how things were". The stakeholders have been deprived of their homes and all they have to go by are their memories. A close approximation of what they had will not do. However, in their haste to return, they will run into many issues, which they will not be prepared to handle.

The fact that Varosha has been mothballed for over forty years is a blessing in disguise. Imagine if the towns we live in could leapfrog the mistakes they made in their development over the last four decades. What mistakes would we avoid? What opportunities would we seize? What areas of wilderness and green space from our memory would we protect now that we realize how important they were to the fabric of the society? What rules would we implement to check wanton sprawl and low quality construction? How many aspects of our life would be different if only we hadn't accepted things as they were? One need only looks at the unchecked, misguided sprawl of the greater Famagusta region to see what the possible present of Varosha could have been. And yet, this task of revitalizing Varosha, and by connection Famagusta, provides so much hope.

Second Chance at a Fresh Start

We must look at the way the construction business handles itself and convince them to change. We must examine the way we dealt with the local environment when local construction methodologies were an art form, custom suited to the local climate, and adapt these methodologies to suit the needs of today. Most likely, you, the reader, are currently sitting in a building that was made not to suit you as the user who lives and works in the actual building, which serves a certain business model. You end up paying the utility bills on the home you inhabit, but I guarantee that little time or effort were put on those concerns by whoever built your home. The simple fact that you are flushing your toilet with drinking water should give you a clue into the fact that when it comes to construction, energy and resource consumption, everything you know is wrong.

We must analyze how the unique aspects of the environment of Famagusta sets it apart from any other place. How would a building interact with the unique changes in local temperature and weather? Is the environment mostly hot or cold, arid or humid, how much rain does it receive? What kind of native vegetation can one rely on for

Figure 13. Famagusta, 2014

shade or for food and how can it retain what little rainwater we get? How close to a building should local trees be planted and how tall will they get? Will those roots damage a traditional building foundation and if so, how can we build to avoid this hazard? How much space do we need between buildings for a breeze to be effective? In short, what makes this place unique from all other places in the world, what makes Famagusta what it is? These answers are unique to a location, and cannot be duplicated with cookie cutter construction. Once upon a time, we had all of the answers on our fingertips but we chose to discard centuries of knowledge for a construction model imposed to us from afar.

The questions may seem almost endless, but the answers that most individuals choose to adopt will naturally determine the appropriate type and density of housing to make a community work in its unique landscape. These answers will affect everything, from the building materials being used to the orientation of a building relative to the sun. It is in asking these questions that we will find the answers to living a life free of energy addiction. We are not advocating completely removing energy consumption from the way we live. What we are advocating for is living in a more intelligent way so that we can consume less energy. The consumption of energy should be a supplement to the way we live, not the magic bullet to

Figure 14. Mediterranean Net-zero Prefab Dwelling based on a 3,500-year-old Archetypal Israeli Design, 2013

seek and resolve all our problems.

Among some of the challenges that we have encountered in our work is that the words ecocity, sustainability, and environmentally friendly processes have an image problem in Cyprus, just as they do in many places of the world. This image of environmental responsibility, fair or not, is not one that fits into the modern Cypriots' view of themselves. In their eagerness to be seen as modern and equal to any other European, Cypriots have shunned anything that may seem to appear as 'backward' and 'old-fashioned'. Like many other European nations did before them, the first areas of society to get this label were those parts of life that are more intertwined with nature.

Most of the support we have received has been grassroots support from the younger generations who have more at stake in the future of this city. However, it is not enough. We must rally enough support so that the revitalization of Famagusta as an ecocity becomes a mandate from all the people and, therefore, a priority for the government. Real change happens from the bottom up.

There are not very many places in the world that get a second chance at a fresh start. We want to save what makes Cyprus such a unique and beautiful place. The planning of this ecocity and the region surrounding it seems to be most urgent and it is the key to taking the right path. If we are not successful in forming an unstoppable movement, if we cannot rally enough support for an environmentally responsible solution toward development that will benefit all communities, then the island will be stuck in the same pattern of conflict, mistrust, and the blind catering to the consumer class that has plagued it for generations. Varosha and Famagusta could become yet another victim of consumerism and energy wastefulness. Instead, Famagusta as a re-united ecocity could claim once again its bi-communal cultural identity and its energy independence, become a symbol of ecological sustainability and peace and a beacon of hope for the future.

Figure Sources

Cover photo by Kamiar Yazdani, 2011

Figure 01. Illustration by Armando Garma-Fernandez, 2018

Figure 02. Illustration by Armando Garma-Fernandez, 2018

Figure 03. Source: Illustration from Charles Francis Hall's Arctic Researches and Life Among the Esquimaux, 1865

Figure 04. Source: http://havanarisquet.blogspot.com/2011/03/conference-on-vernaculararchitecture

Figure 05. Source: https://www.trendir.com/stunning-modern-glass-houses/, 2018

Figure 06. Source: https://www.archtoolbox.com/materials-systems/hvac/how-air-conditioners-work.html, 2018

Figure 07. Source: https://www.pcworld.com/article/2984597/hard-core-data-preservation-thebest-media-and-methods-for-archiving-your-data.html, 2018

Figure 08. Source: https://www.bathcollege.ac.uk/uncategorised/5309, 2015

Figure 09. Source: https://www.cbc.ca/news/canada/british-columbia/construction-demolition-wasteoverflow-recycling-facilities-1.3678389, 2015

Figure 10. Source: https://inhabitat.com/villa-serra/villa-sera-4/, 2012

Figure 11. Photo by The Famagusta Ecocity Project, 2014

Figure 12. Source: Ecocity Builders' webpage, https://ecocitybuilders.org/what-is-an-ecocity/ , 2018

Figure 13. Photo by Vasia Markides, 2014

Figure 14. Source: https://www.greenprophet.com/2013/07/israel-net-zero-prefab-3500-years-old/, 2013

Part Four

Design Proposals and Responses

Cyprus Architecture Design Studio

Jan Wampler

Introduction

Our basic assumptions and ideas are the following:

1. Only ideas not a ‘master plan’.
2. Not knowing the condition of the buildings, having to guess only from photos, has been the biggest issue that we faced. The conditions of all the buildings from structure safety, earthquake safety, general building codes, mold growth and general feasibility of retrofitting and rehabilitation must be examined before any plan is finished. All of these safety codes are currently governed by updated building codes that did not exist when the buildings were built many years ago.
3. All historic buildings including churches, schools, civic buildings, and buildings of memories should be kept, no matter what the cost.
4. We are designing for the future of ten to fifteen years from now -it will take that long for the city to be rebuilt.
5. A sustainable city/an ecocity, was our original guidance when we took on this project and we have tried to explore every possible way this could be done.

In addition to the above, our task was to design a city that will always be full of life.

We have done this for the future of all of Famagusta, the journey will not be easy, there is much to do, but we are on a good journey. This journey will lead to a city that all can be proud of both in Cyprus and the world.

The Project

The project took place in Famagusta, in an area known as Varosha, or the ‘ghost city’. For the past forty years or so, Varosha has been abandoned, fenced off from the rest of the world, and patrolled by Turkish soldiers. This separation occurred after all of its inhabitants fled just hours before the Turkish army intervened militarily in Cyprus in response to a Greek-backed coup in 1974.

Since then, the island has been divided into a Turkish zone in its northern part and a Greek zone in its southern part. Entry into each zone is restricted, and an approval process was required to go from one zone to the other until recently.

Both the Turkish and the Greek zone inhabitants have expressed interest in returning the ‘ghost city’ to its original owners. The

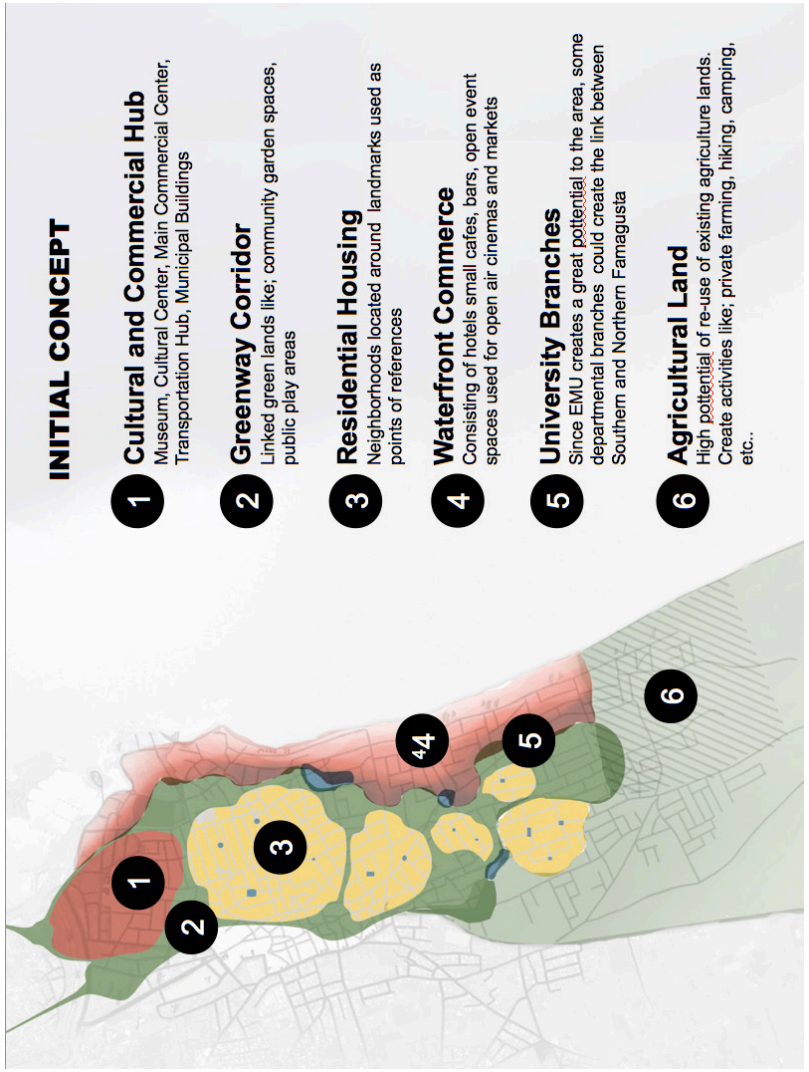


Figure 01. The Famagusta Ecocity Design Studio, 2014

Cyprus Architecture Design Studio with participating students from the University of South Florida (USF) in Tampa has been asked to provide ideas for rejuvenating the area for the future.

The overarching vision has been an ecocity that integrates the most advanced elements of a sustainable life. This would be a unique experience in a European city and a potential prototype for other cities around the world.

The Cyprus Architecture Studio participants visited Cyprus to understand the island's history and listen to more than sixty experts from many fields share their knowledge and thoughts on what the city might become. We could not enter the city, but we were able to view it from adjacent buildings and by walking around the fenced area.

The students worked in five teams along with architecture and engineering students from the north and south parts of Cyprus on a short sketch problem. On the final day, the teams presented their results in Famagusta to a large group of citizens from both sides of the divide.

Upon their return to USF, the students developed more formal architecture designs for the revitalization of Famagusta. By the end of USF's spring semester, their work was shown to an audience in Cyprus by videoconference.

The Cyprus Architecture Design Studio's basic assumptions and ideas for Famagusta are:

1. Our designs offered only ideas, not a formal master plan, for the site. Master plans are a device from the past, rarely followed, since site programs and conditions often change after the fact. Instead of a master plan, our studio's work was more of a 'guiding idea plan' to be altered and amended as new information comes about and the wishes of the citizens are incorporated into the scheme. We insist that citizens who lived there, or will live there in the future, have a critical input into the design process.

2. The most difficult issue that we had faced was not knowing the condition of the buildings; we could only guess it from photos. Before any plan is finished, an inspection of all buildings must be conducted for structural safety, earthquake susceptibility, general building codes, mold growth, and general feasibility of retrofitting and rehabilitation. These and other relevant conditions are now governed by updated building codes that did not exist when the structures in Varosha were built. Such an inspection is even more important today, since the buildings, particularly those with

reinforced concrete, may have corroded and may not be safe.

Of course, all property owners will need to determine, after thorough investigation, whether it is economically feasible to retrofit and renovate these buildings. In many cases, it may not make fiscal sense to do so. Two-to-four-story structures built away from the coast may be easier to save, while buildings along the coast are less salvageable due to their exposure to water and salt over the years. This is only an estimate based on photographs studied by engineers.

3. All historic buildings, including churches, schools, civic structures, and buildings of memories, must be safeguarded, regardless of cost. Some may be in ruins, but the past must be respected by preserving these buildings -or at least their remains- for posterity.

4. We are designing for the future of ten to fifteen years or more from now -it will take at least that long to rebuild Famagusta. Its new citizens may be in their teens or early twenties now -a group that never knew the original city.

5. A sustainable ecocity was our original model for this project, and we have tried to explore every possible way this model could be realized:

5.1 Food production should be done onsite for local citizens and restaurants. Small gardens for individual owners could be on vacant lots, on roofs, and in the area west of the site.

5.2 Food production for export to other areas of Cyprus, as well as the surrounding countries, has been explored. The food types selected were to use as little water as possible.

5.3 Some areas have been set aside for permaculture, where both wildlife and plant life will be allowed to flourish.

5.4 Provision of more water, or retention of rainwater for consumption, irrigation and plumbing, has been a main concern throughout Cyprus.

5.5 Energy creation through solar, wind and other sustainable power sources would reduce the buildings' reliance on oil, gas, the electrical grid and other carbon footprint-compounding sources. Buildings can also be made more energy-efficient with shading devices, passive solar gain apparata, and energy-saving materials such as insulation.

5.6 All demolition materials should be recycled onsite as landfill, paving, and as new elevated areas such as plateaus and berms, etc. The development should use as few imported

materials as possible.

5.7 The area should be redesigned for pedestrian and bike circulation, minimizing automobile use.

5.8 Mass transit has been designed to connect the site with other parts of Famagusta from both northern and southern Cyprus.

5.9 Since many of the present sewage systems are neither code-compliant nor useable, new systems for graywater and blackwater have been proposed for fertilization and irrigation.

5.10 All buildings should be kept 100 meters from the water. Maintaining sand beaches in some areas may be impossible, as sand has been shifting southerly to where new beaches have been created. In addition, maintaining sand in previous locations would be very costly.

5.11 We have used the conservative estimate that the oceans and seas will rise 1 meter in the next 50-100 years; some experts suggest even more. Therefore, we have designed buildings that would be at least 1 meter high from the water level.

5.12 Our project was designed to incorporate local employment, so young people may not have to leave the island to go to work. A sustainable city should generate its own jobs,

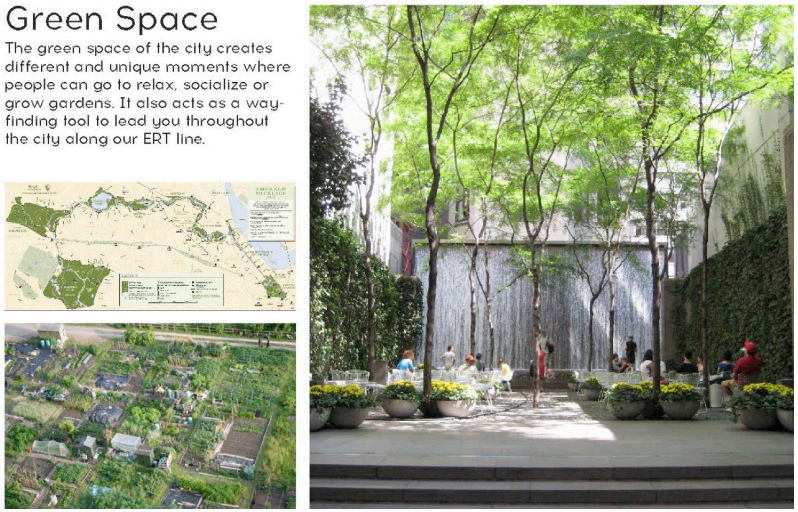


Figure 02. The Famagusta Ecocity Design Studio, 2014

with no outsourcing or out-of-city commuting. All employment possibilities would need to be researched in detail to determine their feasibility.

6. The local port of Famagusta was suggested as a recreational port for boats, with hotels, restaurants and boat-repair shops.

The Old City of Famagusta should become a World Heritage Site with all historic buildings preserved, as a strong tourist attraction. The aforementioned recreational port might share tourist facilities with the Old City. We have therefore tried to find ways to integrate the Old City with the rest of Famagusta through green areas, transit lines, and other amenities, including satellite campuses of Eastern Mediterranean University (EMU).

We have suggested new forms of tourism: eco-tourism, work tourism, exploration tourism, and typical small types of tourism. The young people using the area will request different forms of tourism than the present ones established more than forty years ago, which are not appreciated today. We have found that this type of tourism has failed to provide the local population with the intended economic support. Hotels and restaurants may start as local enterprises but are often purchased by large chains, which the profits to locations far from the area. Local employment now comprises low-paying jobs for maids, dishwashers, taxi drivers,

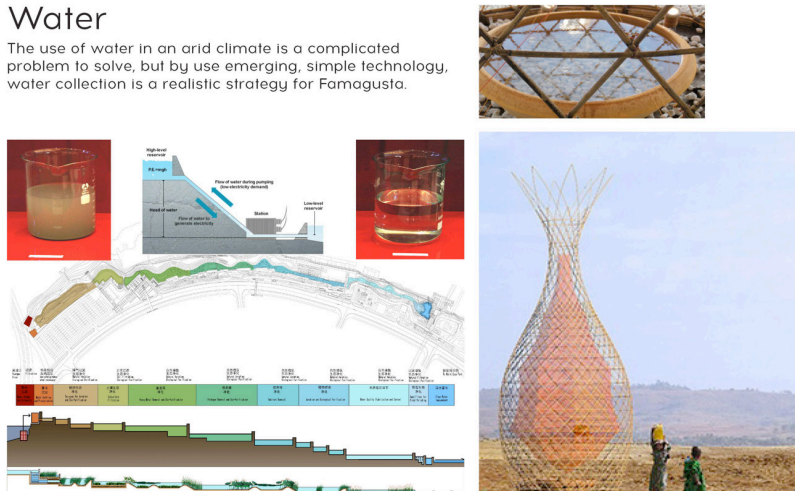


Figure 03. The Famagusta Ecocity Design Studio, 2014

garden help, etc. This has not given the young people who have grown up and lived in the area a reason to remain there long-term. Instead of large hotels, residents could operate small bed-and-breakfast inns within their homes, which would generate more income for the area. Vertical land use has been employed in buildings where possible -commercial ground floors, middle-floor offices, residential upper floors- to give the area a small neighborhood feeling. Our task is to design a city that will always be full of life. The following concept is by one of the Cyprus Architecture Design Studio's five student teams, each of which had a slightly different approach to the project, but all contained the above criteria. I first went to Cyprus in 2009 with students from the Massachusetts Institute of Technology (MIT) for a design studio and lecture series. I was struck by my first view of the "Ghost City" from a house across the street, and I wrote the following in reaction to it (Part 1). For the recent Cyprus Studio I wrote the adjacent poem (Part 2).

Part 01
From the roof top 2009

I look into the openings of a forgotten world
See plates on the table through broken windows
From people with broken hearts

How could this happen, I whisper
I scream
I look through tears in my eyes
To see how life can be so cruel

If distant stars look down
Let them see this forgotten world
And they too shed a tear
For the injustice of our civilization

Tears for the buildings,
Tears for the people
Tears for the land
Tears for joy
That was once here.

Part 02
On way to Cyprus 2014

We can never be what we are capable of being
Until this vacant dark cloud if changed
This is our task
This is what we must do

For all the world to see
For the people who once laughed here
For lovers, children, families, of before
For generations not yet born

A new day is here
With joy and care

With love and passion
And we will not rest till the cloud is gone
This is our goal!
Now we are all citizens of Cyprus!

TEAM 5

The intent is to create a framework that would integrate Varosha to the rest Famagusta through a series of public greenways. While minimally impacting the existing cultural remnant and existing physical infrastructure, these greenways would create a new ecological identity that establishes a network of social connectivity and sustainability through the city.

OBJECTIVES:

- Use modern ideal sustainable practices and permacultural theory to produce a working example of an "Eco City".
- The greenways potentially introduce value to property around them taking focus off of the shore.
- To add to meandering greenways, series of public infrastructural transport features would be implemented to reconnect smaller settlements south of the Greenline to the modern city of Famagusta. Several of these transport means would be:
  - o Electrical Rapid Transit both local within Varosha and no local acting as a connection between neighboring towns and Famagusta up to EMU and over to Nicosia.
  - o Hiking trails and other pedestrian path ways.
- To avoid seasonal population absence, a solution might be to create an economically lucrative and sustainable overlap between seasonal tourism and student populations by introducing University satellite campuses into southern Famagusta. They would also be facilitating a youth driven cultural unification.
- Creation of landscape features within the permaculture zone to the southern shore and throughout in other key areas using nontoxic, ecological safe building ruble from buildings unfortunately unable to escape demolition due to its deteriorated structural integrity. This would help to maintain and explorative attitude from eco-tourism and urban explorers. As well, the building ruble and other found objects could promote a certain amount of security for local wild life to find refuge in and create a new eco system. This ecosystem could populate the water as well creating a sort of artificial reef. These are, of course, building materials that are not being reused in new construction phases of Varosha.
- The undeveloped land in the DMZ between Famagusta and Deyrenia shows to be an ideal location to sow the seeds of a permacultural self-sustaining environment. Also allowing and inspiring ideas of ecological tourism including hiking, camping, and natural preservation among other activities.
- New Waterfront conditions based on public exposure and types of uses.
  - o To the immediate north and south of the walled city along the shore and along the existing port seawall, the public water front would be commercialized and subject to varying degrees of seasonal tourism and vacationers as well as center to educational requirements.
  - o South of that there would be a less commercialized, secluded sort of water front condition.
  - o Towards the southern end Famagusta, between Agios Memnon and Deryneia, the water front would be left to nature and inhabited in only a few areas to allow access along trails to docks and public space. No commercial activity.
- Seasonal population change could benefit the Port. Not being the major shipping port, it was in the past, there is opportunity to create a more recreational destination for tourism and scholarly endeavors. With a focus around the walled city become cleated, it could help to aid in making the old walled city a World Heritage site.

Figure 04. The Famagusta Ecocity Design Studio, 2014

CONCEPTUALIZING THE DESIGN

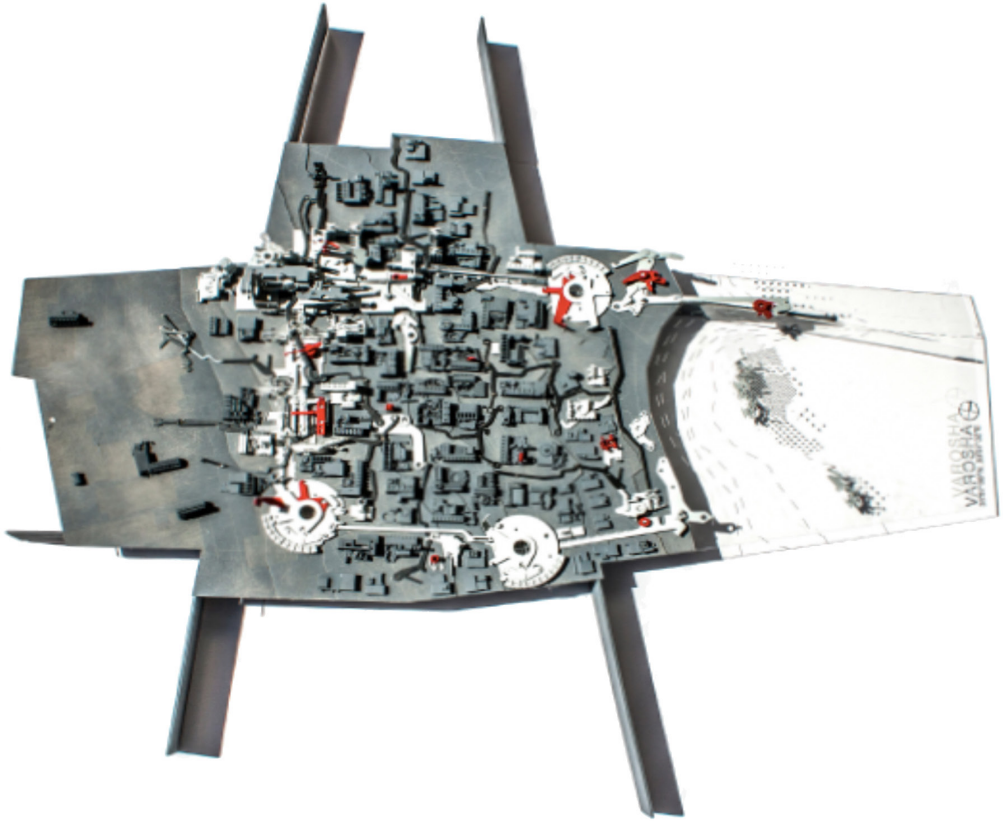
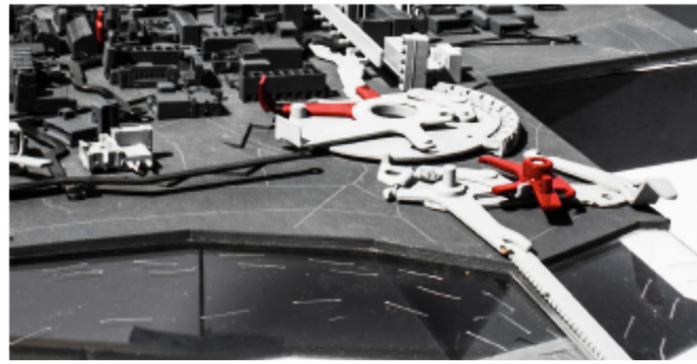


Figure 05. The Famagusta Ecocity Design Studio, 2014

01 **found object study**
-major pedestrian through fare in densest urban core.



02 **massing the density**
-a massing study derived from the found objects conceptual exploration

03 **exploring the inbetween**
- abstract overlay or various public spaces and their connections

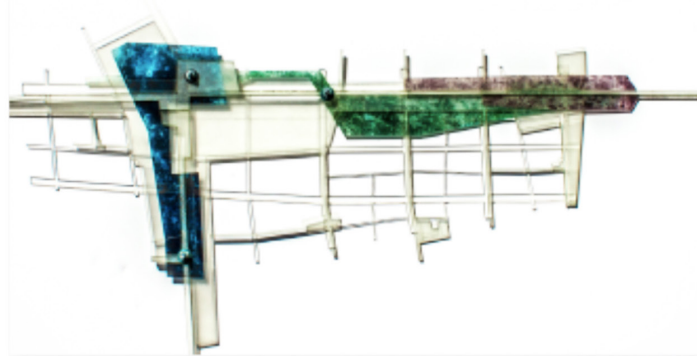


Figure 06. The Famagusta Ecocity Design Studio, 2014

Figure 07. The Famagusta Ecocity Design Studio, 2014

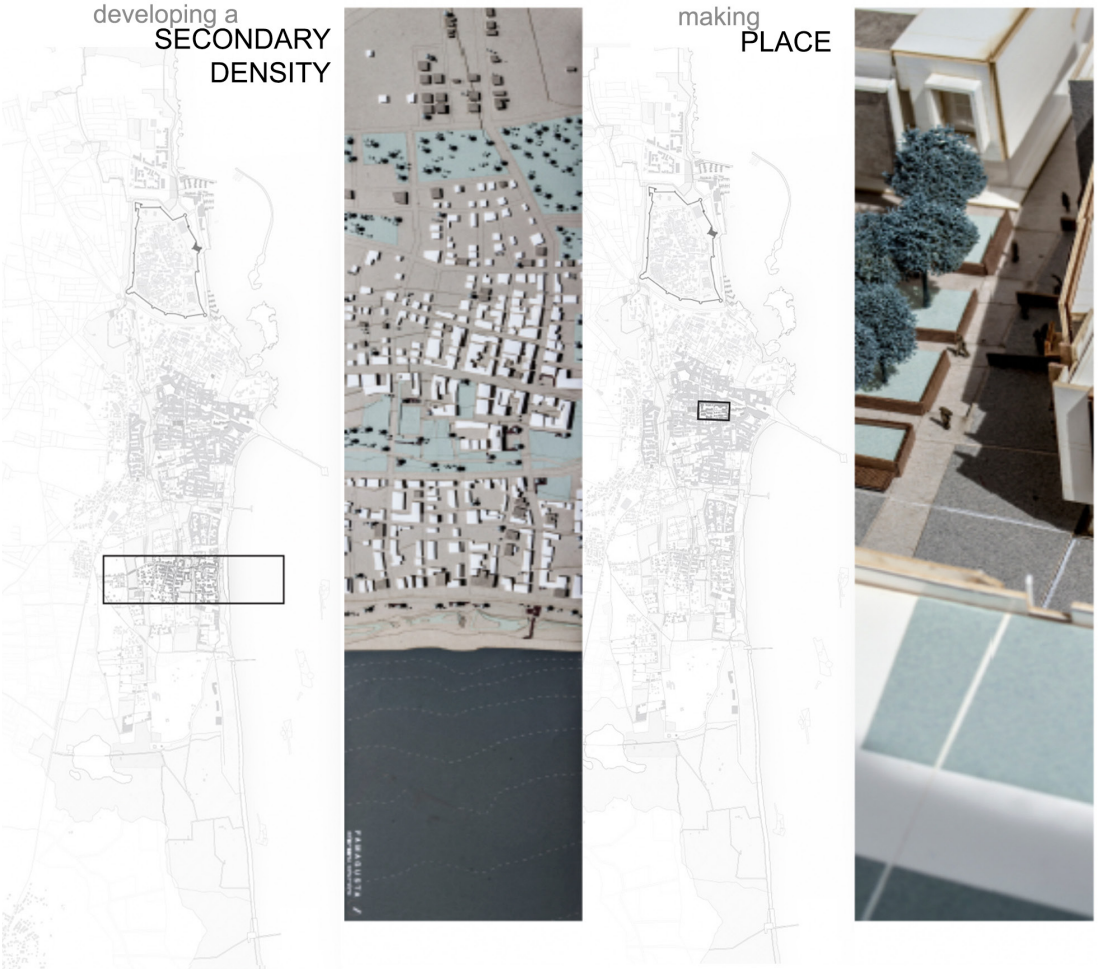


Figure 08. The Famagusta Ecocity Design Studio, 2014

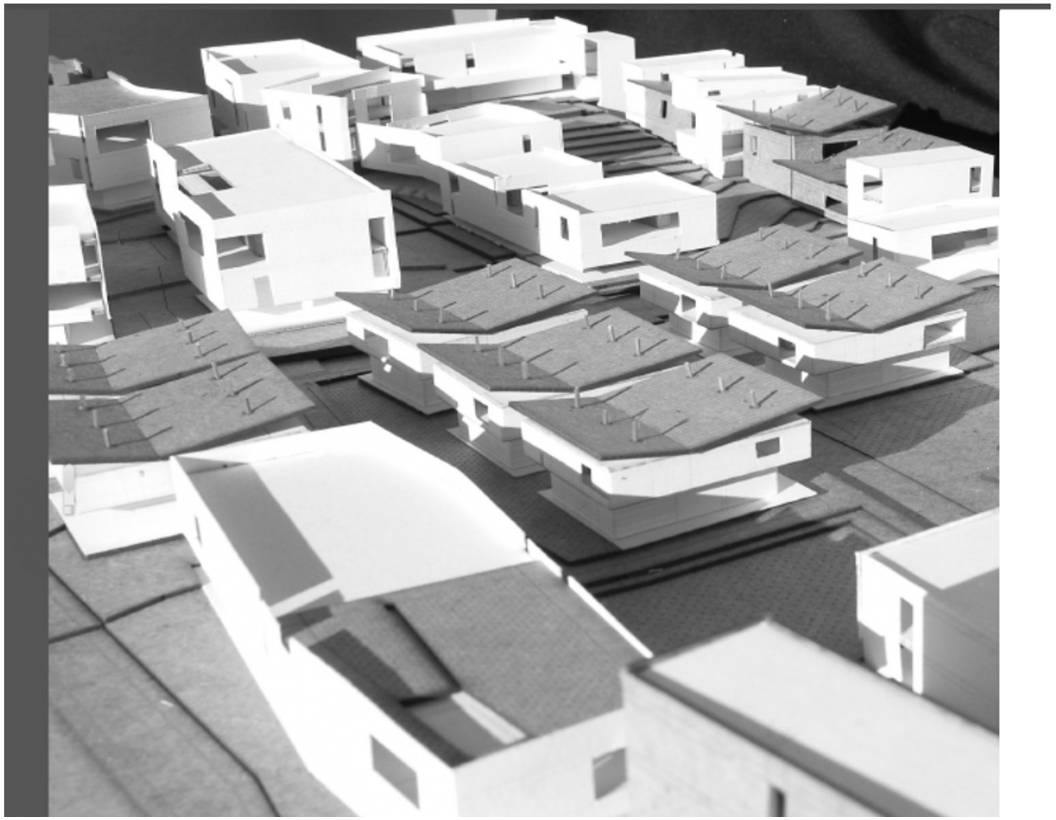
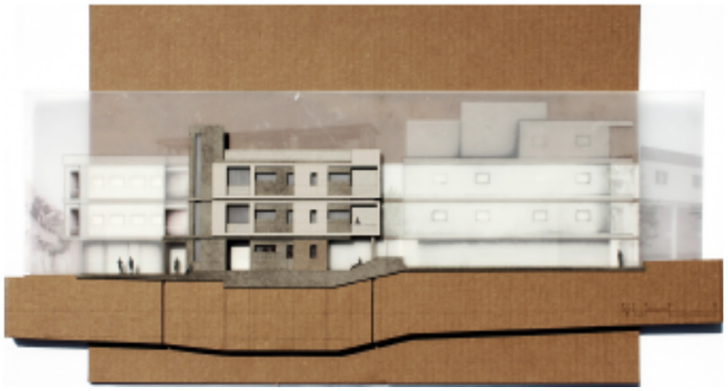
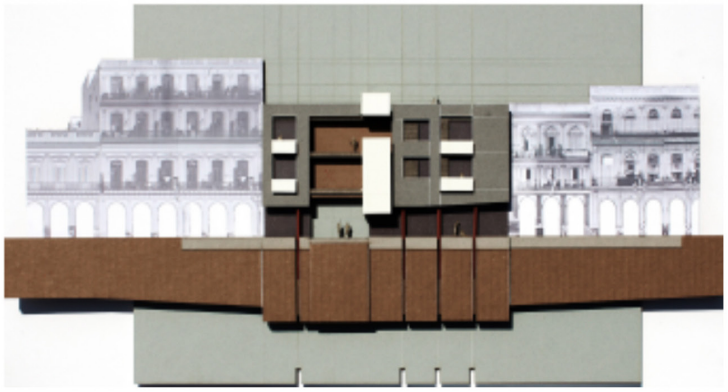


Figure 09. The Famagusta Ecocity Design Studio, 2014

01 elevation study
-housing



02 elevation study
-high density



03 elevation study
-hotel / bed and breakfast

Figure 10. The Famagusta Ecocity Design Studio, 2014

01 pedestrian path
-major pedestrian through fare in densest urban core

02 pedestrian path
-pedestrian path with a typical residential block

03 museum & main street
-major pedestrian through fare in desest urban core at a public open space

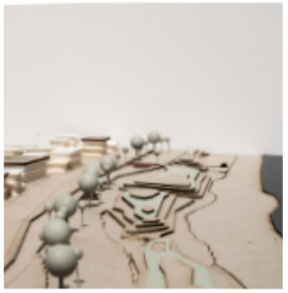
04 transit
-primary road with electric rapid transit

Figure 11. The Famagusta Ecocity Design Studio, 2014

developing a
SECONDARY DENSITY

value of the greenway
-schools, housing, and other mixed use buildings

waterfront
-built up stand dunes for coast line protecgion and habitat creation



waterfront plan view
-illustrating separation of the shore line from the built up environment

Figure 12. The Famagusta Ecocity Design Studio, 2014

01 perspective
-new water front condition

02 section
-water front

a site section

b site section

Figure 13. The Famagusta Ecocity Design Studio, 2014

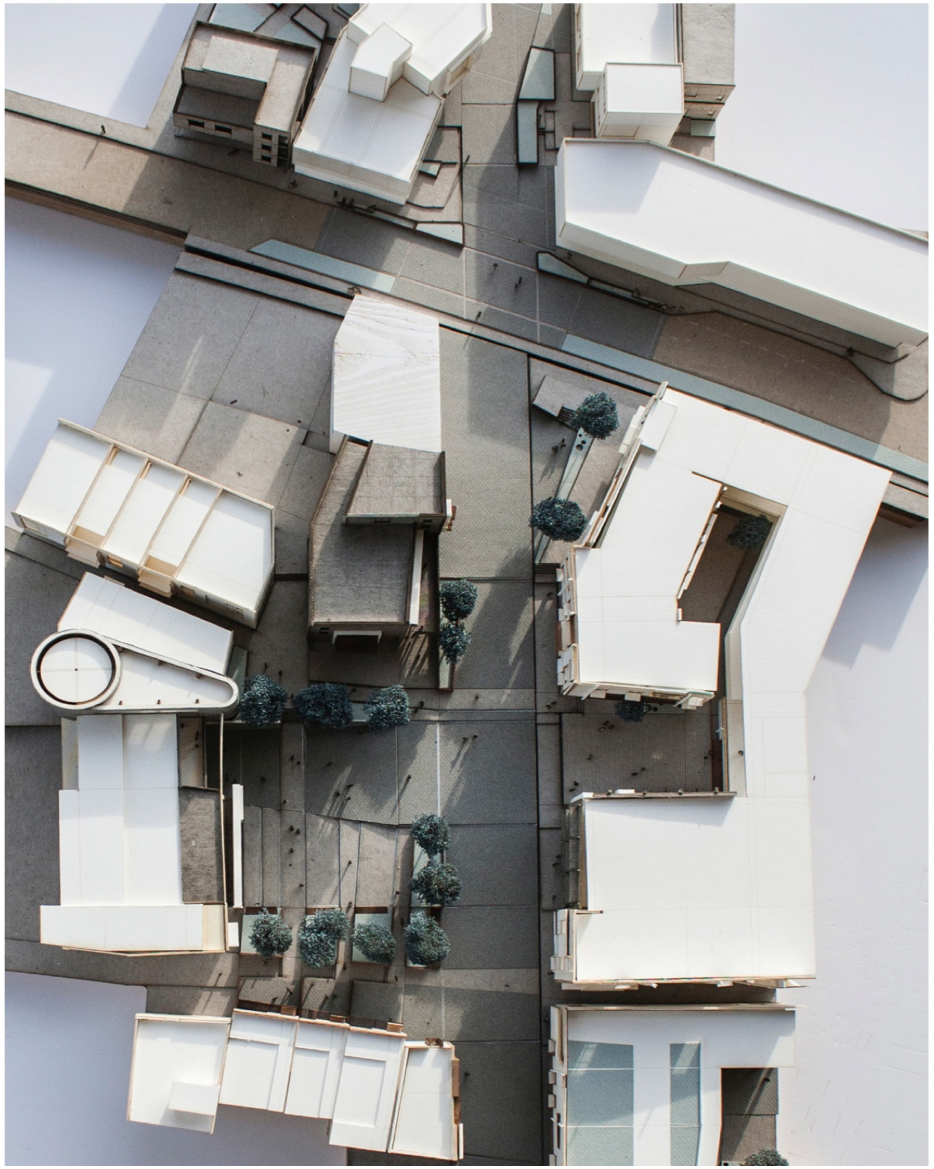


Figure 14. The Famagusta Ecocity Design Studio, 2014

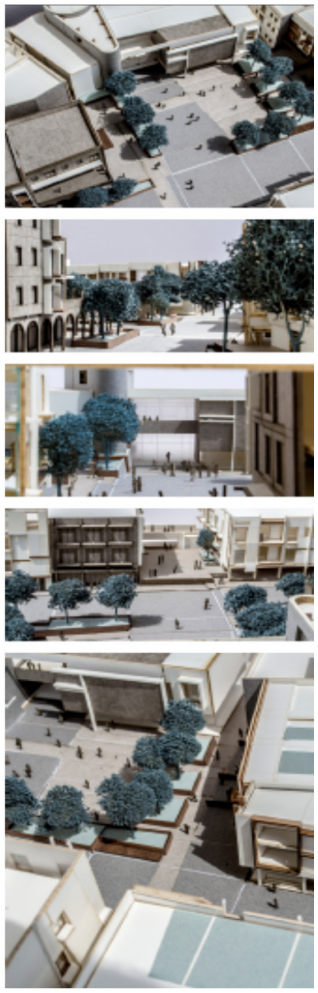


Figure 15. The Famagusta Ecocity Design Studio, 2014

OVERALL PLAN

1. open natural preservation /public park

2. trail

3. re-purposed industiral dock yards to center to commercial and touristic activities

4.port re-worked to allow for small craft recreational marinas local storage with both dry and wet allpe.

5. through the port has small marinas integrated, it still allows for larger ships to dock.

6. old walled Famagusta

7. open public parks and green spaces

8. new cultural and civic Hubs

9. greenway public path

10. public water front

11. local permaculture farming

12. existing agricultural use

13. demolition and ruble reuse features
(reefs and water retention)

14. green line hiking trall

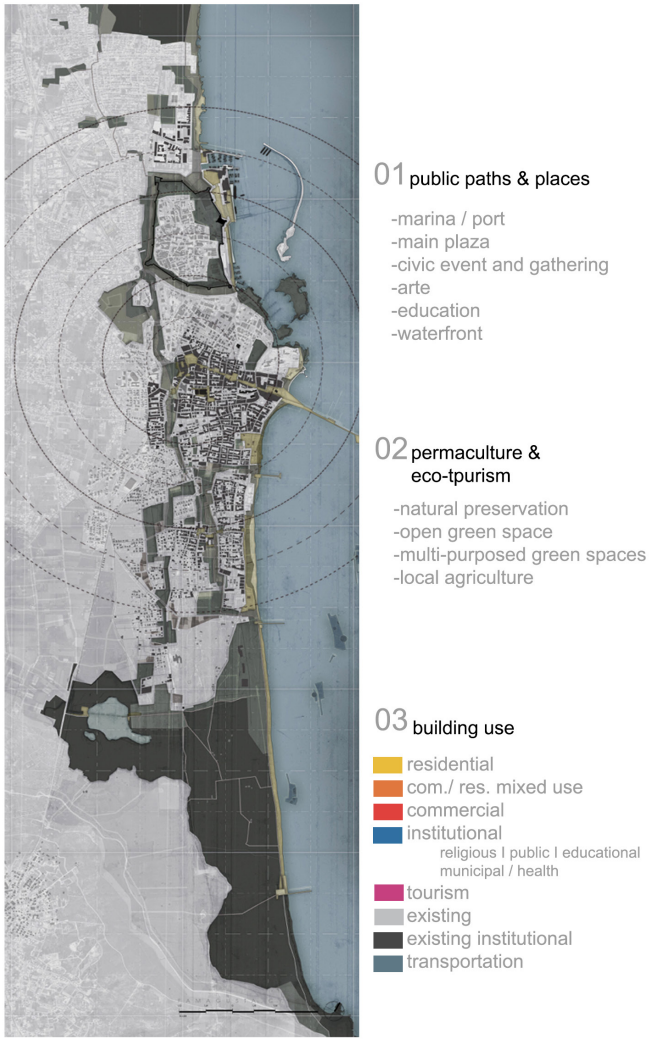


Figure 16. The Famagusta Ecocity Design Studio, 2014

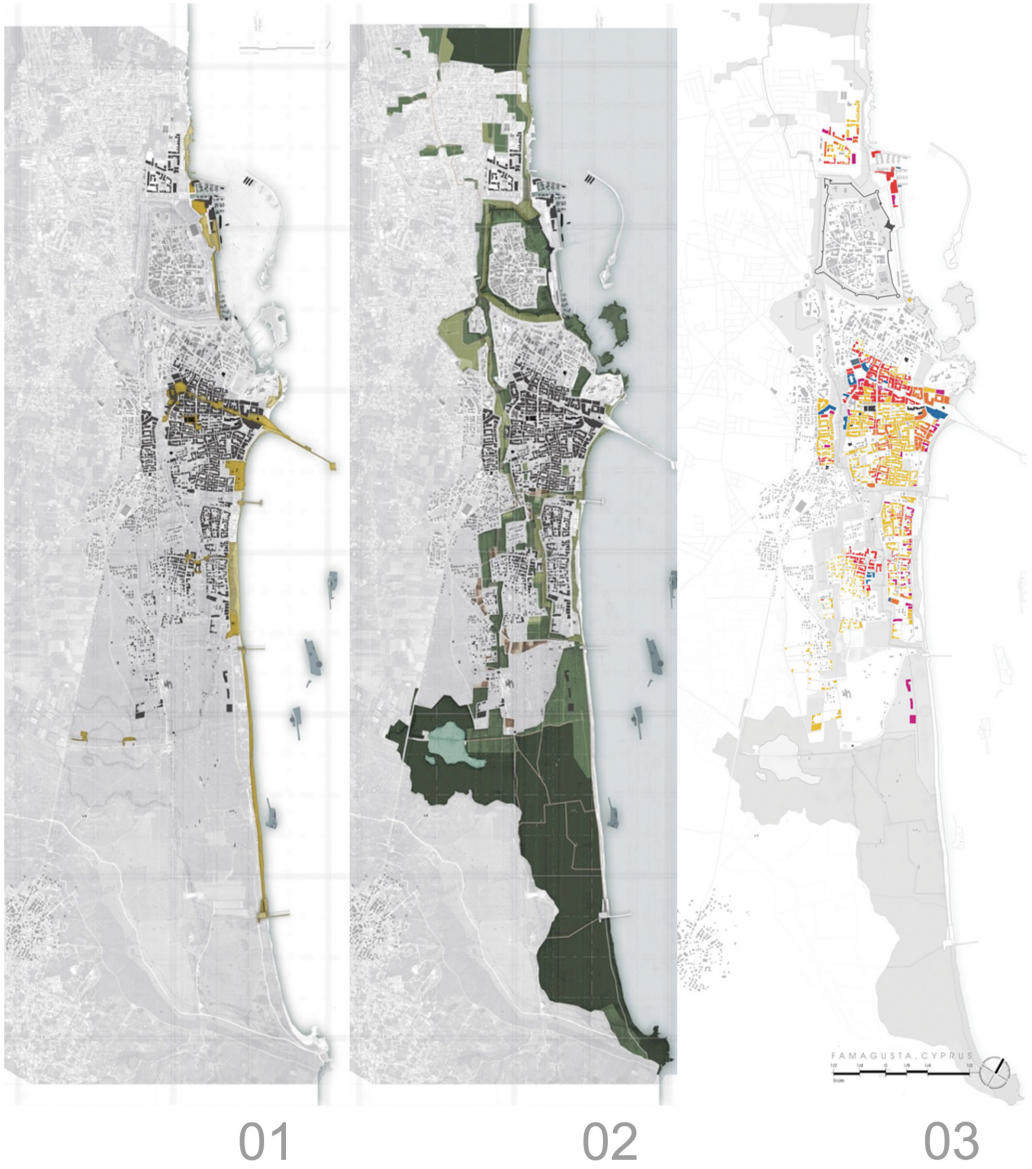


Figure 17. The Famagusta Ecocity Design Studio, 2014

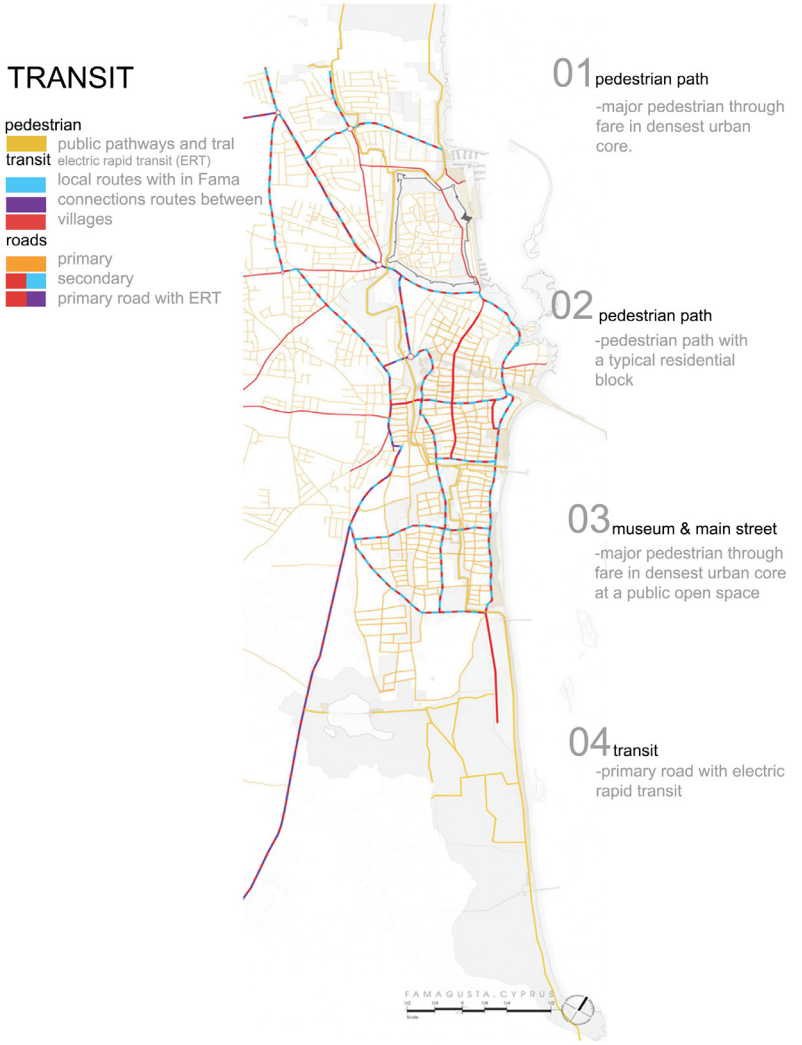


Figure 18. The Famagusta Ecocity Design Studio, 2014

Figure 19. The Famagusta Ecocity Design Studio, 2014

DEVELOPMENT PHASING

01 urban core development
-defining parks and public spaces
-introduction of permacultural areas

02 major local & connective transit routes

03 developing connective public green paths

04 defining areas of local agriculture and permaculture importance

05 areas of ecologically touristic interest

06 waterfront development

07 the walled city
-historical preservation of the walled city
-redevelopment of the marina

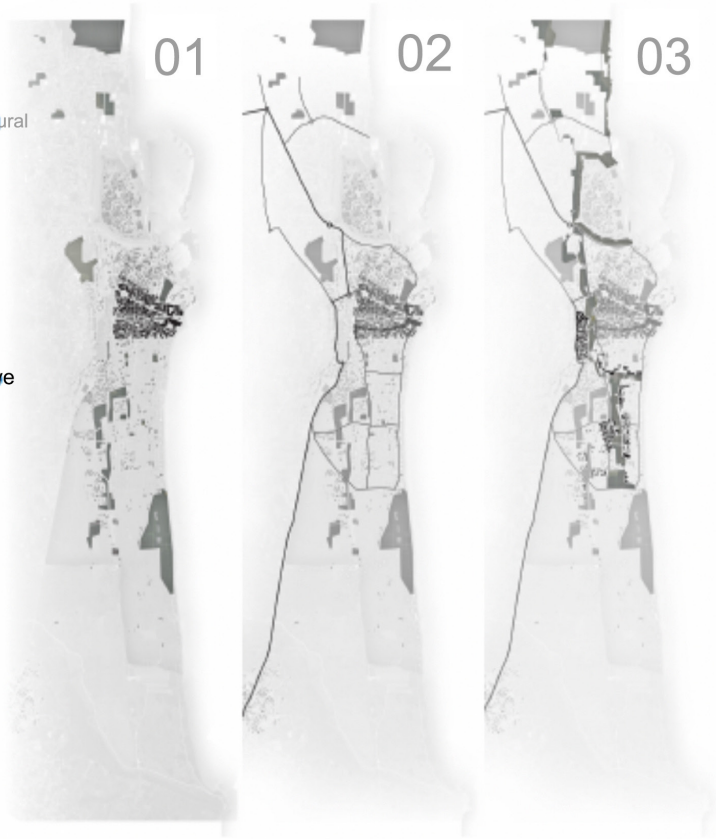


Figure 20. The Famagusta Ecocity Design Studio, 2014

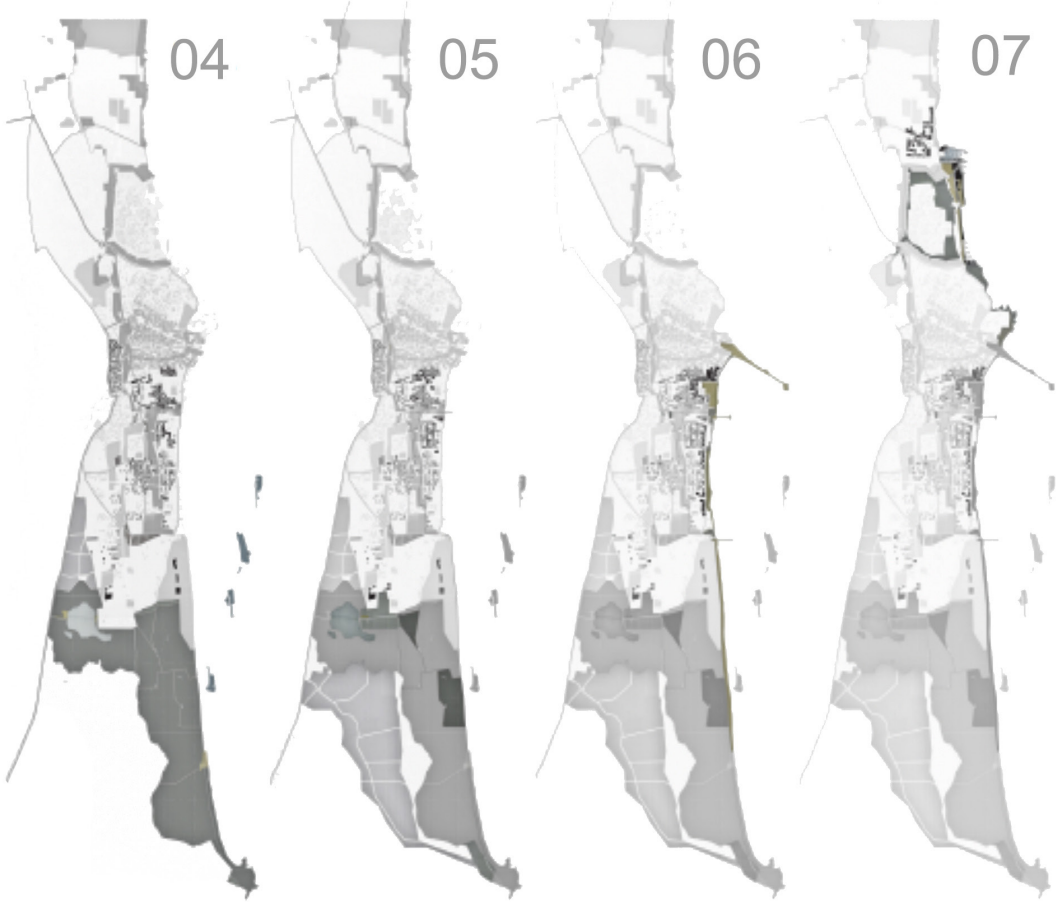


Figure 21. The Famagusta Ecocity Design Studio, 2014

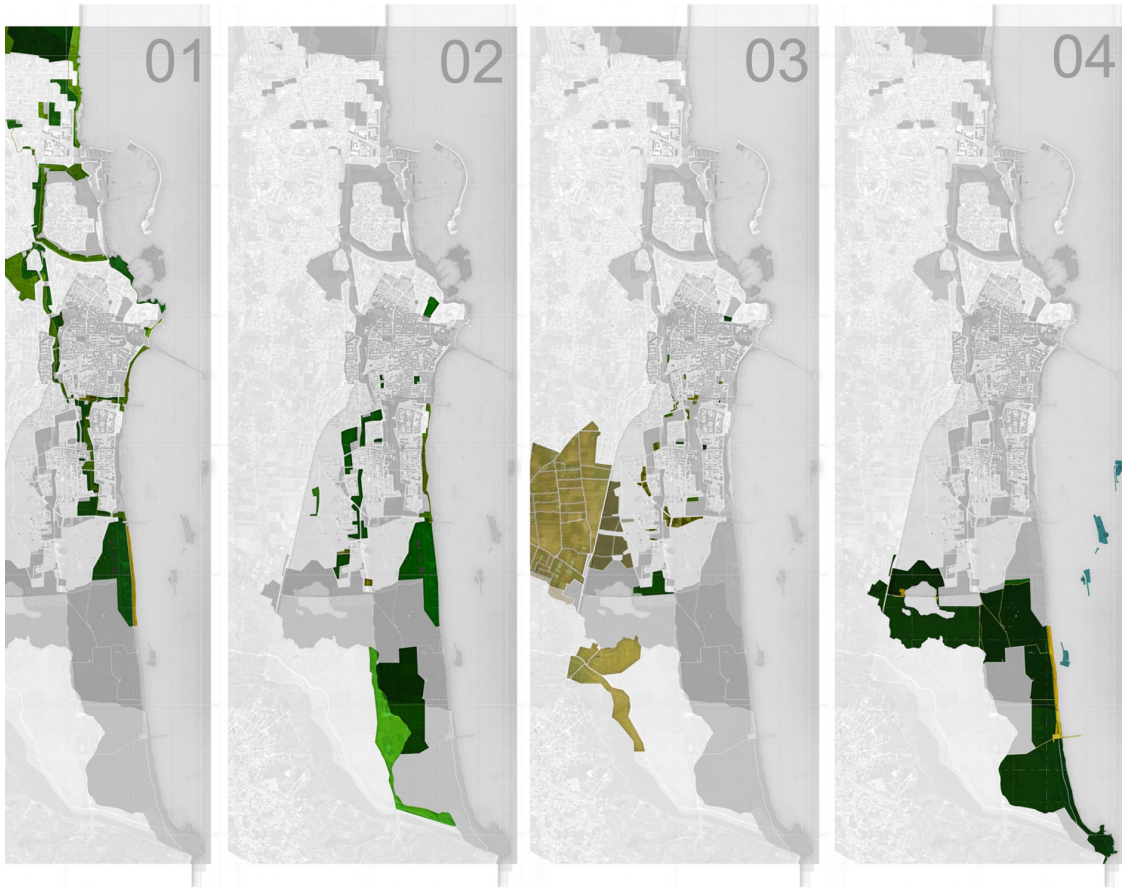


Figure 22. The Famagusta Ecocity Design Studio, 2014

Credits

Professor
Jan Wampler, FAIA
Markborough Endowed Professor
University of South Florida
Professor of Architecture
Massachusetts Institute of Technology

Teaching Assistant
Matthew Baits

USF Students
Samuel Alamo
Marcela Arango
Maeghann Coleman
Daniella Covate
Ryan Dyer
Juan Ferreira
Christian Stanley
Georgina Karakasilis
Tatiana Larue
Andres Moguel
Sally Plunkett
Jay Powell
Israel Sanchez
Chris Galbraith
Susan Stimmel
Brian Watts

Cypriot Students
Stavros Adamou
Nilay Birsel
Cemaliye Eken
Elena Kourti
Marina Oratiou
Safiye Özaltiner
Sotiris Pavlides
Andriani Souzou
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Cyprus EcoCity Team
Ceren Boğaç
Armando Garma-Fernandez
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Jan Wampler

EcoCity Project Volunteers/ Coordinators
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Julian Guillois
Rhay Christou
Costa Cobstanti

Program Director of USF School of Architecture
Robert MaoLeod

Critics
Josue Robles
David Hygglestone
Keuber Perry
Brain West
Andy Hayes
Jason Welty
Robert MaoLeod
Chadaphan Hanwisai
Dan Powers
Americo Andrade
Emily Resoiniti

Consultants
Armando Garma-Fernandez
Emily Markides
Vasia Marides

Funding
Ananymous and Jan Wampler, Architects

Figure 23. The Famagusta Ecocity Design Studio, 2014

A group of houses make a block,
a group of blocks make a neighborhood,
a group or neighborhoods make a village
and
several villages make a city.

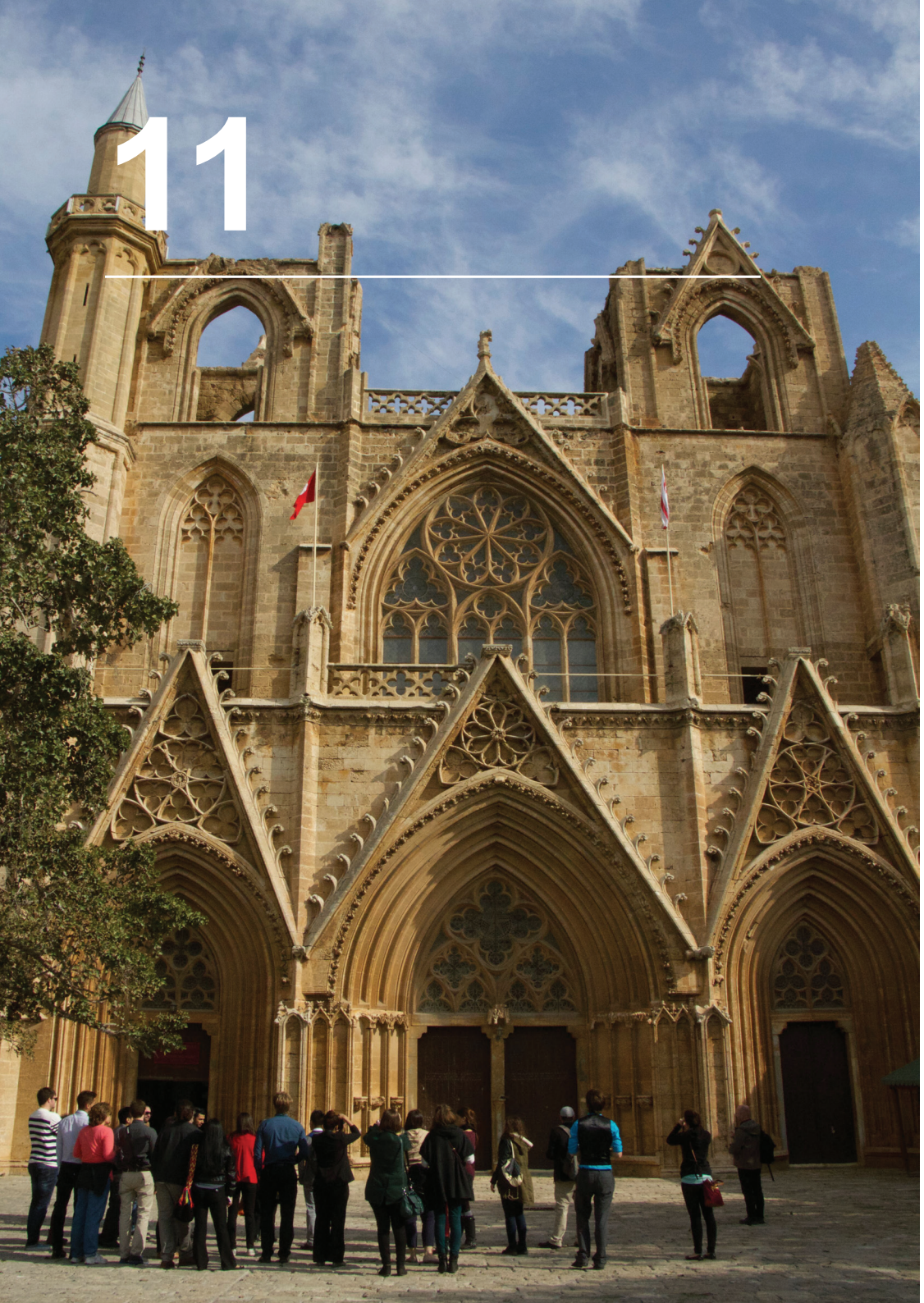
This will make a joyful/livable city.
The work of the studio has tried to do this
for the future of Famagusta,
the journey will not be easy,
there is much to do, but we are on the right journey.

This journey will lead to a city that all can be proud of,
both in Cyprus and the world.

For this endeavor, we are all citizens of Cyprus.

Jan Wampler
Boston, MA
November 2016

Figure Sources



11

Participatory Urban Planning as a Tool for Reconciliation: The Case of the Famagusta Ecocity Project (FEP)

Nektarios Christodoulou & Zoi Rossetou

Introduction

Urban planning is neither value-neutral, nor apolitical, nor the end-result of a strictly technical process. Indeed, planning policies are intrinsically political in the sense that they embody fundamental social choices. They are used to allocate scarce resources; distribute economic benefits and costs; empower or oppress social groups and they can become tools that can further or impede social justice. The political nature of planning is perhaps more evident in contested urban environments, i.e. cities confronted with sovereignty disputes (Bollens, 1996; Yiftachel, 1998; Gaffikin, Mceldowney et al., 2010; Calame, Charlesworth et al., 2011; Bakshi, 2014). The relevant literature includes numerous examples of planning being used in these contexts, as a mean to legitimize competing territorial claims and to further partisan political objectives (for more on this see Bollens, 2002; Coward, 2004; Bevan, 2005; Pløger, 2010; CinC, 2012; Pullan, 2013). Infrastructure planning (Pullan et. al., 2007), development control (Bollens, 2007), housing policy (Kliot & Mansfeld, 1999), environmental protection (Misselwitz and Rieniets, 2009) and cultural heritage management (Dumper, 2006) are often caught up in the dispute, failing to escape it's divisive dynamic. Yiftachel and Yacobi (2003) researching out of Jerusalem, go as far as to describe this phenomenon as urban ethnocracy -a term Yiftachel introduced back in 1993 to conceptualize the 'process of 'ethnicization' prevalent in contested urban spaces.

Recently, however, a number of bi-communal planning initiatives[1] about the contested city of Famagusta[2] have shown us ways in which planning can help mitigate conflict-induced biases by creating opportunities for common action and interaction between G/C and T/C Famagustians. The importance of these initiatives can hardly be overstated, especially considering that from 1974 up to 2003[3], the only context of interaction between these two long-estranged communities has been the official negotiations concerning the Cyprus problem conducted by the leaders of the two sides.

In this context, this chapter investigates whether inclusive planning processes can have a beneficial influence on the current status of ethnic relations in Cyprus. It focuses on the Famagusta Ecocity Project -a bi-communal initiative that aims to revive the war-torn city of Famagusta in an environmentally sustainable way- and asks whether: (a) participatory planning can help mitigate conflict-induced biases and, (b) if planning issues of common concern (e.g. environmental and/or cultural protection) can help

create social alliances between T/C and G/C Famagustians that transcend ethnic lines.

In terms of structure, the chapter begins with a general overview of the FEP, followed by a short discussion of Allport's Intergroup Contact Theory. The latter aims to identify the conditions (Allport , 1954) under which intergroup contact typically leads to the reduction of prejudice as well as the processes that mediate the relation between contact and prejudice (Pettigrew, 1998). These conditions and processes are then juxtaposed to the particularities of the FEP drawing primarily from a focus group conducted among the G/C and T/C student-participants of the project. The chapter concludes with a brief synopsis of the results and the limitations of this research.

The Famagusta Ecocity Project (FEP)

The FEP is, as previously stated, a bi-communal planning initiative and an NGO that aims to revive the war-torn city of Famagusta in an environmentally sustainable way. In January 2014, the project held a week-long conference in which more than 60 G/C and T/C professionals and academics presented and discussed with

Figure 01. Students Presenting Initial Planning Ideas about a Future Unified Famagusta, Cyprus, 2014

an ethnically mixed group of approximately 300 Famagustians the various challenges facing the city. The conference had the form of a town hall meeting and was structured around 9 panel discussions covering a multitude of subject areas (architecture, urban planning, environmental, coastal and civil engineering, peace and conflict resolution, history and culture, energy, permaculture and sustainable agriculture and urban economics). Parallel to these panel discussions, the project also featured a worksop/ design studio, in which students from both sides of the divide came together to create and present to the attendees of the event initial planning ideas about a future unified and sustainable Famagusta. The activities of the FEP took place in locations both north and south of the Green Line and they were supported by a crowd-funding campaign. Finally, it is also worth mentioning that both mayors[4] of the city attended separately, different events and activities of the project[5].

Allport's Intergroup Contact Theory

In assessing the impact of participatory planning processes (like the one used/employed by the FEP)) on ethnic relations, we draw on Allport's *Intergroup Contact Theory. Allport*, in his seminal 1954 work "The Nature of Prejudice", has identified four key conditions that intergroup contact must meet In order to achieve reduction of prejudice: the first dictates that the contact should happen between equals; the second, is for both groups to share a common goal, which is commonly referred to as a superordinate goal; the third is that

Figure 02. Student Teams with Prof. Jan Wampler, 2014

interaction has to be based on intergroup cooperation and not competition; and finally, the fourth condition relies upon the presence of institutional support from the authorities or the law. Allport's *Contact Hypothesis*, often cited as one of the most effective ways to reduce intergroup prejudice is supplied with strong empirical evidence (Allport, 1954; Brown 6 Hewstone, 2005, Pettigrew 6 Tropp, 2006, Psaltis, 2011). A meta-analytic test (Pettigrew & Tropp, 2006) of 515 relevant studies covering a variety of intergroup situations in 38 different countries concluded that there is indeed an "inverse relationship between intergroup contact and prejudice" (p.766). The same meta-analytic study, also concluded, that while the four optimal conditions proposed by Allport, do enhance the positive effects of intergroup contact, they are not essential to achieve positive outcomes. In other words, even in the absence of all or some of these four conditions, intergroup contact does typically lead to the reduction of prejudice. Pettigrew (1998), in an effort to explain this, has sought to identify the processes that mediate the relationship between contact and prejudice. He suggests the following four processes: the first, is learning more about the out-group, which leads to the correction or mitigation of previously-held negative views; the second, is behavior change to conform to new situational expectations; the third, is generating affective ties, which reduces intergroup anxiety; and the fourth, is in-group reappraisal, i.e. the process of reevaluating the views we hold about our own community, social or ethnic group etc.

Analogous studies carried out in Cyprus appear to also confirm the *Contact Hypothesis*. In particular, a meta-regression research of more than 20 relevant studies suggestes that contact between G/C and T/C significantly impacts the levels of prejudice (Psaltis, C., Ioannou, Ma., & Ioannou, MY., 2016). The authors of the aforementioned publication, quite interestingly observe that "The positive effect for Greek Cypriots and for Turkish Cypriots is even higher than the mean effect reported in worldwide reviews indicating that intergroup contact has great potential for Cyprus to be one of the major confidence building measures" (Psaltis, C., Ioannou, Ma., & Ioannou, MY., 2016:p.1).

The Present Study

In order to examine whether or not the FEP had a beneficial influence on the participants' views of the out-group, the present

study compares the particularities of the project to Allport's optimal contact conditions as well as Pettigrew's mediating processes. The comparison is primarily based on a focus group (N=10, 3 Male; 7 Female) with the (5) T/C and (5) G/C student participants of the project and is further supplemented by ethnographic methods of study such as direct observation of all the activities of the FEP (architecture design conference, workshop, site visits etc.) as well as conversations with team members and participants of the project. The focus group was held a month after the completion of the January 2014 conference/workshop and was structured around a series of open-ended questions (see Table 1). All the participants were encouraged to answer these questions as well as take part in the conversation that followed them. Probes or follow-up questions were also used when deemed necessary. All participants were 18 years or older and the focus group was recorded with the written consent of the interviewees. The focus group data was transcribed right after its completion and the analysis of the results followed Merriam's (2009) qualitative data analysis guidelines. The general structure of the focus group questionnaire is presented in Table 1.

Research Limitations

Due to economic constraints the study did not investigate possible attitude changes (towards the out-group) of the panelists and the audience that took part in the FEP architecture design conference. The importance of this constraint lies in the fact that public involvement in the planning process (especially in Cyprus) does not tend to include workshops. These processes are most commonly based on town hall-type meetings like the one attended by the panelists and the audience of the FEP. This is not to say that town-hall-type meetings do not offer opportunities for meaningful intergroup contact and, in turn, reduction of intergroup prejudice. It should be noted, though, that the results of this study are only applicable to participatory planning processes based on a workshop-format.

Results and Discussion

As previously stated, the presentation and discussion of the results are structured around Allport's four optimal contact conditions and Pettigrew's four mediating processes.

Table 1: Focus Group Questions	
1	What is your overall impression about the project?
2	Which moment from the project do you think that you will remember in six months?
3	What do you think is the most important thing that came out of the project?
4	Do you think it's possible to turn Famagusta into an ecocity?
5	At the panel presentations, how would you describe the interaction between T/C and G/C?
6	At the panel presentations, did you find any issues that were particularly divisive between G/C and T/C?
7	At the panel presentations, did you find any issues that were particularly unifying between G/C and T/C?
8	At the panel presentations, do you think that there was a topic that should have been discussed to a greater extend but was not?
9	How would you describe your cooperation with one another during the workshop?
10	Did you find any difficulties working with one another?
11	Was there anything during the project that made you feel uncomfortable in any way?
12	When would you say was the first time you met a member of the other community? In what context*?
13	Did you ever participate in a bi-communal project before this one? What was it about?* Can you describe your experience of it?*
14	In general, how would you describe the views and opinions of T/C towards G/C and vice versa?
15	How do you think participation in projects like the Famagusta Ecocity Project (FEP) affects people's views and opinions about members of the other community?
16	What is your experience in relation to that?
17	One of the main assumptions of the project is that you are planning for a city that can be socially and spatially unified. What do you think is the ability of architecture and planning to work toward this unifying goal? What do you think are the limitations of architecture in working toward that unifying end?*

Table 1. Focus Group Questions
- Follow up questions are marked with a *

Equal Group Status Within the Situation

All the G/C and T/C workshop participants were graduate students in either architecture or civil engineering. Thus, they all shared similar educational backgrounds. Each community was represented equally in the workshop (5 T/C and 5 G/C) and they communicated primarily in English due to the fact that they had to work with 15 American students and an American coordinator (Professor of Architecture Jan Wampler). The students were working in groups of five comprising of one G/C, one T/C and three American students. During the focus group, the participants did not express any discomfort in relation to the status they enjoyed during the architecture design conference. On the contrary, in two separate cases during the interview, the participants stated that their common profession served as a sort of third language between them:

> *[…] And also most of us are architects and civil engineers. As professionals, we use the same language. We use same words. Because we have same culture. Same ability (skills). We are the*

same."(Male, 25, T/C)

"I think that the principles of architecture are common to both of us, what we want to achieve, what kind of city we want to create. So we all had the same principles in our mind." (Female, 22, G/C)

The Existence of a Superordinate Goal

The idea to turn Famagusta into an ecocity appears, throughout the interview, to be a noble common cause that has the ability to bring both communities together. It should be noted that all of the quotes listed below were answers given at the second (Which moment from the project do you think that you will remember in six months?) or third question of the interview (What do you think is the most important thing that came out of the project?).

"My best moment, I believe, was that we had the chance to bond together, by a common cause." (Male, 23, G/C).

"[…] first of all, it was first time for me specially to work in a workshop with my G/C friends. it was very good experience for all of us working together, to know each other and create something very new for Famagusta." (Female, 27, T/C).

"[…] I think it was more important to get in touch, get to know each other and understand that we are all the same. No one is different, it doesn't matter that you don't speak Greek, I don't speak Turkish but we are still all Cypriots and we can live, work and make amazing things together." (Female, 23, G/C).

"I think, I agree with all of you, it was a great experience. I couldn't Imagine that this outcome would have eventually occurred because in four days it was a workshop about Famagusta trying to make Famagusta an ecocity. It wasn't supposed to be so productive in only a few days, but it was, it really was. It was a perfect opportunity to meet each other, to set common goals and try to achieve them and we really did make a change, I think." (Female, 22, G/C).

Figure 03. Student Teams with Prof. Jan Wampler, 2014

Figure 04. Student Teams with Prof. Jan Wampler, 2014

"Actually, my personal experience about the project and before talk about the architectural point of view was that we saw that all people, how they actually came for main reason and for main goal, we somehow started to be in unification with each other." (Female, 25, T/C).

Interaction Has to Be Based on Intergroup Cooperation and Not on Competition

Another important feature of this common goal, seems to have been its ability to re-contextualize/re-politicize the controversies facing the city; its ability to create alliances, based on urban issues of common concern that transcend ethnic ones. For example, the participants, while discussing the challenges in turning Famagusta into an ecocity did not talk about G/C versus T/C but instead about the need to cooperate in order to confront politicians, real estate investors, big land owners etc.:

"The big problem here are the really big owners of the hotels, the factories. I don't want to say their names but there are a lot of brands there. So what they are going to do? The place of Varosha[6] it's not like, for them, the memories or the other stuff. It's the money for them because every centimeter of that land means something for them. It's what's going on all around the world. That's our biggest problem, I believe." (Female, 27, T/C).

"Of course, the politicians are the biggest issue as well, as we see in our daily life that the solution –it's not coming, still. But especially the owners (the big ones) and their related governments will be at the end of the day the enemy." (Female, 25, T/C).

"I agree with both of you. Just remember, the politicians are mostly controlled by the investors. Everything on earth is controlled by money. I am not okay with this, I don't like this but let's accept it, let's face it and let's think with this way and find a way to compromise things and say ''Okay, you have the money, you want to make money, I want an ecocity, let's find something in the middle''. Let's propose a solution for them that will be acceptable. Give them money and also

Figure 05. The Famagusta Ecocity Design Studio, Cyprus, 2014

Figure 06. The Famagusta Ecocity Design Studio, Cyprus, 2014

build an ecocity. We have to find ways to propose a profitable solution for them." (Female, 23, G/C).

"What I am afraid of, is that those investors and businessmen will take advantage of the legal owners. I hope I am wrong but I believe they are going to buy all the land for free, I mean for low prices because now we have economic crisis. «I need the money because I don't have a job, there is an economic crisis now. So, I am going to sell it for 200000 euros and in 5 years when Varosha will be something wow! It will cost 1M, for example this land». That's what I am afraid from real estate agents in both sides." (Male, 23, G/C).

"What I faced at the last day of the presentations, after we were done. There was one guy, he is the owner of the biggest real estate agency of North Cyprus let's say, and he was there. He came and spoke to me, we know each other somehow, and I was wondering while I was driving back home, ''why was he there?''. He is not part of the (G/C and T/C) relations, he is not part of the peace (process), he is only a real estate agent, the biggest one of the Northern part (of Cyprus), so why was he there?" (Female, 27, T/C).

Figure 07. The Famagusta Ecocity Design Studio, Cyprus, 2014

"We are actually the people that have no profit (to gain) from it. We imagine something good and something we will be proud of. None of us will gain money if this will happen, or the other thing will happen. We are just two opposite sides. Those who have an interest and those who don't have an interest in Varosha. We have to combine these two groups." (Female, 22, G/C).

The Presence of Institutional Support from the Authorities or the Law

Many of the panelists that took part in the conference were members of public institutions North and South of the Green line. However, they did not attend the activities of the project in their formal capacities as the two sides are still in a status of mutual non-recognition of sovereignty (and/or authority to govern). Also pertinent to this is the fact that the two mayors of the city did address the FEP, but they did so separately. The G/C mayor visited activities of the project carried out in the South part of the island and the T/C mayor, activities that took place in the North part of the island. It should also be noted that the project did not receive any funding from public institutions or authorities. The absence, though, of official institutional support in conjunction with the informal character of the project, helped it to: a) navigate the aforementioned complex "mutual non-recognition" issues and, b) made it easier for people from both communities to attend its activities.

Learning More About the Out-Group

Three out of the five G/C participants of the workshop first met a T/C during the FEP architecture design conference. In describing this experience, they all mentioned: a) the relatively negative image they used to have for the other community prior to the FEP conference; b) the role of the educational system in shaping these negative views and c) how contact with members of the out-group changed, in a positive manner, their attitudes towards the other community.

"It was for the Famagusta Ecocity Project. This was my way to meet my T/C friends. Listen to them and understand that we are all the same, we all want the same things. During school years, after 15 kids start to talk and they have opinions

about everything unfortunately, and their feedbacks and their opinions (on T/C) wasn't the most positive. And because I had no touch with you guys and other T/Cs, I wasn't very positive. When I met you I realized that it's really good to have this kind of experience because it helped me realize that we are all people, we are all the same." (Female, 23, G/C)

"The first time I actually met and talked to a T/C was a month ago during the Famagusta Ecocity Project. I didn't really have any experience with T/C, so this project was really an eye opener for me. I just saw that people do exist there. There is not some grey area there. That there are people there, living. That they are not monsters like school will let you believe. There are no monsters on the other side. But it's difficult for people around me to accept that." (Female, 22, G/C)

The rest of the interviewees stated that they had between 1 to 3 encounters with members of the out-group prior to the project. Their accounts of the first time they met a member of the other community follows once again the same pattern.

"Actually in my family nobody introduced G/Cs in a bad way. Because we used to live together in the previous times. But somehow, during our educational life, we are educated in a negative way. They are telling us kind of bad stories about them. I think this is the problem. We are educating our children to become an enemy to the opposite side." (Male, 25, T/C)

"Before my first meeting with a T/C I had the impression that T/C are indeed monsters. Because I grew up in a refugee area. During my years in the primary school I grew up with, you know, posters of Turkish people holding guns and all that stuff all the time… Both my families are refugees and they are all negative with that stuff. But after I met my first T/C friend I realized that nothing of this is real. Because we are the same. We even have some common words." (Male, 23, G/C)

An exception to this rule was a 28 years old T/C female participant

Figure 08. Student Teams with Prof. Jan Wampler, 2014

Figure 09. Student Teams with Prof. Jan Wampler, 2014

who mentioned that she has frequent contact with G/Cs. She attributed her overall positive outlook of the other community to the fact that she was raised with stories of solidarity between the two communities (during troubled periods) and the fact that she has been working on the South part of the island for several years.

Changing Behavior (to Conform to New Situational Expectations)

A recent comparative study of G/C and T/C policy documents, urban studies, and student projects about Famagusta, has found that the two communities tend to ignore parts of the city that they assume will be eventually controlled by the other ethnic group (Christodoulou, 2016). The bi-communal character of the FEP seems to have inspired students to challenge/resist this divisive dynamic:

"There was a moment that (name of female T/C) and I worked together and we tried to find which buildings were important and significant so we can keep them and not demolish them during the rebuilding of the city… and we were excited when we used to find Turkish school and Greek school side by side." (Female, 23, G/C)

"Or church and Mosque." (Female, 27, T/C)

"Yes, church and Mosque we also found. And Turkish bank and Greek bank. All the other banks we didn't care about but especially those two were exciting because we find them together, side by side. I think that was inspiring. That is part (of the job) of the architect. To design those cultures to be together, to find common places for them so they can be together. Do not divide them. Do not put the Turkish school here and the Greek school there. That is the job of the architect to synthesize. To synthesize factors." (Female, 23, G/C)

Generating Affective Ties

The interactive character of the workshop, the all-nighters, the tours and the site visits appear to have offered opportunities for informal exchanges between the students, which in turn has lead to the emergence of friendships. As we have previously seen, the existence of a superordinate goal), the majority of the students

assess the friendships they have established during the project as one of the most important things that came out of this experience.

"Suddenly we were talking about coffee. And (name of female G/C) was talking about coffee, (name of male G/C) and then (name of female G/C), (name of male T/C), everybody was talking about coffee. So as Cypriots we suddenly said okay, this touristic thing is not for us, (name of tourist guide) please let us stop and have a coffee. And she said, ''No we cannot stop, we don't have time''. And we said, ''Okay we are going to be back here in five minutes. All the Cypriots we passed through a coffee shop bring our coffees and we got to the bus later." (Female, 27, T/C)

"And the Americans made us sing a song because we were late!" (Female, 23, G/C)

"Yeah, definitely." (Female, 27, T/C)

"It was really nice because we got in the bus, and Jan (the coordinator of the group) has a rule, the last one to the bus has to sing. We all went last as a group so Jan said, you are late and you now you all have to sing and we said, okay let's do something together and we sing Eshe Vereve and we sang in Greek and they continued in Turkish and everybody in the bus was like ''oh that was amazing.'' (Female, 23, G/C)

In addition to that, the workshop provided opportunities to discuss the largely inescapable political realities of the island; and in doing so, cultivate empathy towards the out-group.

"For me it was very special, the day that we went for a site trip at Varosha. We met with a woman and she was telling us her story, she was sharing her story with us. One of my G/C friends really got emotional and she started to cry. At that moment I came next to her and we hugged each other and we shared that moment, we shared our past and we spoke about it and gave each other support." (Female, 27, T/C).

In-Group Reappraisal

In dealing with specific spatial, social and environmental issues facing Famagusta, the interviewees, recognized controversies that group/classify the city's stakeholders, not in relation to their ethnic affiliation (i.e. G/C vs T/C), but in accordance to how they position themselves to the aforementioned issues (ecocity versus investors, politicians, big land owners etc.). By doing so they recognize that their respective communities are not comprised of people with unanimous and unvarying opinions about the urban future of the city.

In addition to that by dealing with specific spatial challenges and by getting to know the city more, the students, seem to have felt more comfortable and confident in voicing their opinions about the future of the city and in advocating for what they believe to be right.

"I would like to add something on what you said. I totally agree with you. All these years I was hearing my parents talking about... My father use to work on the hotels at Famagusta, my mother went to gymnasium, to school there. I was hearing them talking about Famagusta and I was feeling that I am not allowed to talk about Famagusta because I haven't lived there. So I don't know what's going on there, what their memories are and how important that city was. And I was feeling that I had to be silent and let them talk about that city. But now, after this project I feel like, "No, I have an opinion too". "I have the right to imagine and envision the city the way I want to live in it". And I think that's the most important outcome of this project. This project gave me the option to have an opinion on Famagusta myself, not my parents' opinion." (Female, 22, G/C)

Conclusion and Future Research

This chapter has attempted to emphasize the ability of participatory planning processes to mitigate conflict-induced biases. The results of the relevant qualitative study suggest that: a) spatial issues of common concern have the potential to create alliances across -and sometimes in defiance- of ethnic affiliations; b) that the inherently collective nature of the planning process offers opportunities for intergroup interaction which in turn can lead to prejudice reduction, in-group and out-group reappraisal and empathy cultivation. These results may concern inclusive planning processes, which are based

on workshop-formats but are not necessarily limited to them. Future research on the subject must attempt to test the validity of these findings in more commonly used public participation formats.

"Actually it (the FEP) was a first step of long story. A long story for our country. We can say that if it is needed for this country, for Cyprus, as a young generation we should do it. It doesn't matter Turkish or Greek Cypriots, as Cypriots we should do it." (Male, 25, T/C)

Acknowledgements

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1 "Famagusta Ecocity Project", "Hands on Famagusta".

2 For more on what makes Famagusta an ethno-nationally contested city and the divisive tendencies it faces see Christodoulou, 2016; Bogac, 2014; CRR, 2014; Stratis & Christodoulou, 2014.

3 The opening of crossing checkpoints (23rd of April, 2003).

4 Under the 1960 constitution of the Republic of Cyprus, Famagusta (like Nicosia) has a G/C and a T/C municipality. The T/C municipality is located in Famagusta and the G/C municipality is currently located in Limassol as it was forced to move to the South part of the island after the events of 1974.

5 More info about the Famagusta Ecocity Project can be found at www.ecocityproject.com and recently published stories on CNN (goo.gl/Q5LaHO), BBC (goo.gl/Fo15LE), El PAIS (goo.gl/frFT9w), LE MONDE (goo.gl/DS5pa2) and AL JAZEERA (goo.gl/bqafFT).

6 Varosha is the enclosed part of Famagusta. An area (of approximately 6 km2) that has been fenced off by the Turkish military right after the events of 1974 and that remains up to this day one of Europes' most infamous "Ghost Cities".

Figure Sources

Cover photo by The Famagusta Ecocity Project, 2014

Figure 01-09 Photos by The Famagusta Ecocity Project, 2014

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Vasia Markides is an artist and filmmaker; founder and director of The Famagusta Ecocity Project, an effort in Cyprus to transform an occupied ghost district and its surrounding city into Europe's model ecocity; A painter originally, Vasia turned to filmmaking in 2003 and completed "Hidden in the Sand" (2008), a chronicle of her mother's hometown of Famagusta under Turkish occupation since 1974, including the six square kilometer fenced off ghost district of Varosha. The film has screened in festivals across the U.S., Puerto Rico, Germany, Cyprus, Turkey, and Portugal. After launching the Famagusta Ecocity Project and directing a documentary about the effort, her team's work gained worldwide media attention (CNN, BBC, AP, Huffington Post, National Geographic, Boston Globe, ABC, TedX Limassol and more). She freelances as a videographer, video journalist, and video editor in Maine, New York City, and Cyprus.

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The Famagusta Ecocity Project

This book is dedicated to those who chose to take action for a better life for all. It traces a road map not travelled by many along ecological paths that connect rather than segregate offering splendid vistas and bold visions to its readers. It is a book written by a group of people whose roots are intertwined yet, they only learned about the patterns of their lives incidentally. It is a guide for an ecopolis that does not stand far away.

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