THIS IS A CALL TO ACTION !

Let's mobilize the community and the local authorities to work towards a self-sufficient and sustainable network that empowers its human and natural resources.

#01. **PILOT PROJECT** 2015

IF YOU'RE A ______ A STAKEHOLDER, TECHNICAL EXPERT, VOLUNTEER, COMMUNITY ACTIVIST, BOTANIST, GET IN TOUCH WITH US collaborate@theotherdada.co

#BeirutRiverLess www.the0therDada.com

BEIRUT RIVER BACK TO LIFE

Beirut River Watershed Project is a strategic approach for Beirut River and its watershed initiated by theOtherDada and developed with their partners LCEC and UNHabitat with the aim to **Bring Beirut River Back to Life**.



THIS IS A CALL TO ACTION !

Let's mobilize the community and the local authorities to work towards a self-sufficient and sustainable network that empowers its human and natural resources.

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INTRODUCTION

Beirut River Watershed Project is a holistic strategy for Beirut River and its watershed developed by theOtherDada and their partners LCEC and UNHabitat with the ultimate aim to Bring Beirut River Back to Life. It is initiated in relation to the Beirut River Solar Snake (BRSS) project installed on the concrete channel of Beirut River. The project's aim is to enhance the urban corridor of Beirut River and revive the green and blue infrastructure delineating it

In order to achieve this goal, we defined an initial pilot project located around Bourj Hammoud and Badawi neighborhoods and looked at the site challenges specific to the Pilot Project context. We started with a study of the status and conditions of the river. We developed guidelines that set the general direction of potential interventions responding to the identified challenges.

We focused on two important aspects: community and nature. We propose connecting the surrounding neighborhoods and integrating nature in the urban environment. The human-centered design proposal tackles environmental and social concerns, and engages local stakeholders in finding locally adapted solutions. It is important to mobilize the community and the local authorities to work towards a self-sufficient and sustainable network that empowers its human and natural resources.

theOtherDada's proposal is based on the concepts of biomimicry [design inspired by nature] and biophilia as people have an innate need to be close to nature. We believe that rehabilitating the ecosystem of Beirut River will improve people's living conditions. We evaluated ecosystem services and ecological performance standards to enable the ecological processes involved in connecting biodiversity hot spots and restoring existing green areas.



OUR GOALS

AWARENESS RAISING + CAPACITY BUILDING + ECOSYSTEM REHABILITATION

• CREATE A GENERATIVE TOOL THAT CAN BE USED & REPLICATED IN SIMILAR CASES AROUND THE CITY • ENGAGE LOCAL COMMUNITY IN EQUITABLE SITE USE

• REDUCE POLLUTION & HEAT ISLAND EFFECT

• ACCOMODATE SOCIAL, ECONOMIC & ENVIRONMENTAL SERVICES • IMPROVE BIODIVERSITY & SITE PERFORMANCE

• PROMOTE RESILIENT URBAN DEVELOPMENT

• ENHANCE QUALITY OF LIFE & WELL-BEING OF PEOPLE

SUPPORT SOCIAL
 CONNECTION

The proposal developed by theOtherDada [tOD] aims to replace the existing deficient Gray Infrastructure with an environmentally friendly Blue and Green Infrastructure.

This is done by studying the Ecosystem Services provided by a healthy river and translating them into Ecological Performance Standards.

tOD's proposal keeps people at the heart of the design by engaging local stakeholders and tackling their issues/concerns, developing social and environmental solutions adapted to the site.

tOD

MULTI DISCIPLINARY HOLISTIC STRATEGY

ペ ペ ぷ 湯 面 ? **GOVERNANCE**

 awareness and education • engagement of users and stakeholders communication information panels sustainable site maintenance

ECONOMY

 integrative design process resilient community on-site food production •small-scale interventions online crowd-funding

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PEOPLE 👫 🕇

- public park
- social connection
- mental restoration
- equitable site use
- services to community

11111

MOBILITY

 pedestrian circulation adaptive mode of transportation wheelchair accessibility and safety of pedestrians

ENVIRONMENT

- site
- water
- fauna and flora habitat
- soil
- materials
- renewable energy

 Solution
 Solution

 Solution
 Solution

 Solution
 Solution

 Solution
 Solution

* site assessment through literature review, observational field visits and stakeholders interviews to identify site challenges.





WHERE DOES IT EXTEND?

the boundaries of the Beirut river

The natural extension of the river





The River Watershed overlaps **4 districts:** Beirut, Metn, Baabda, & Aley.

The Urban and Peri-Urban sections include the following municipalities: Beirut, Bourj Hammoud, Furn el Chebbak, Sin el Fil, Hazmieh, & Mkalles.







PERI-URBAN SECTION





Daychouniyeh existing dam obstructing natural flow of river causing sedimentation at its base





Hazmiyeh open drainag



URBAN SECTION







Start of concrete walls to define edges of the River





View of Beirut River from the Farmers markel

Ruins of Jisr el Bacha





NEIGHBORHOOD SECTION



Informal public space & transportation hub





Storm water drainage system directly flowing into the River and water runoff accumulating pollutants from vehicles, dusts and litters



Sewage from Sin El Fil dumped into the river

Interventions by locals











* Research on best-practice management solutions.



Beirut River Valley is a major migratory area for **birds** and a unique place where **fauna**, **flora**, **water and people** interact

MHY IS BEIRUT RIVER IMPORTANT?

Hint: it has to do with biodiversity

more than migratory birds through the Beirut River valley in autumn (website: http:// www.birdlife.org/ datazone/info/ ibacritme)

MIGRATORY BIRDS AREA

Beirut River valley is a major migratory area for birds that borrow this route in spring and autumn. The zone is classified as A4iv category. The birdlife organization SPNL (Society for the Protection of Nature in Lebanon) has noted that in 2006 **more than 70,000 birds were seen migrating through the Beirut River valley in autumn**.

BEIRUT RIVER: FAUNA BIODIVERSITY





Ciconia nigra (Black stork)

ide (Crane

Hieraaetus pennatus (Booted eagle)





Aquila pomarina (Lesser spotted eagle)



Falco peregrinus (Peregrine





Luscinia svecica (Bluethroa



Milvus migran (Black kite)







Anas anser (Goose

Laridae (Gull)



buzzard)

Lanius nubicus (Masked shrike) Hierraaetus fasciatus (Bonelli's

Aquila clanga (Grea spotted eagle)

Buteo rufinus (Long-legged



eagle

Stigiformes (Forest owl)

Pelecanus erythrorhynchos (White pelican)











Ľ REPTIL



The river today = open sewer of domestic + industrial waste water <u>highly polluted</u>

& posing numerous health risks to its neighbors!



HOW IS IT TODAY?

Beirut River in the media

NOVEMBER 27 2014 DAILY STAF







ANIMAL BONES + BLOOD STRAIGHT INTO THE RIVER & THE SEA

ILLEGAL DUMPING OF SLAUGHTERHOUSE WASTE IN THE RIVER!

SIGHTINGS OF A 1.5 M LONG CREATURE



... & WITNESSES CLAIM THERE ARE MORE CROCODILES IN THE BEIRUT RIVER AREA!

CROCODILE LURKING

ORIGIN: A HOUSE PET THAT GREW TOO LARGE & WAS DUMPED IN THE RIVER

FEBRUARY 2012 + AGAIN, MAY 2015 DAILY STAR

BY AN UPSTREAM "UNKNOWN" FACTORY...







DYE WASTES THEN FLOWED INTO THE MEDITERRANEAN SEA

— CATASTROPHIC EFFECTS ON THE LOCAL ECOSYSTEM

LET'S LOOK AT SOME CASE STUDIES FROM AROUND THE WORLD

TAKING SUCCESSFUL CASE STUDIES SHOWING HOW INTERVENTIONS TRANSFORMED RIVERS FROM ARTIFICIAL TO NATURAL STREAM WATERWAYS

OVERVIEW ON OTHER RIVERS

CASE STUDIES RIVER REHABILITATION FROM ARTIFICIAL TO NATURAL

WORST CASE

POLLUTED NOISE COVER RIVER WITH HIGHWAY

ARTIFICIAL

CHANNELIZED WATER BODY POLLUTED COVER RIVER

POLLUTED FLOOD-PROTECTION

BEIRUT RIVER

CHEONGGYECHEON STREAM



Undergrounded1955
Covered with a freeway & concrete deck 1971

WADI HANIFA



- High level of water pollution
- River covered
- Water waste dump

ELWHA RIVER



Important for the development

- of the Olympic Peninsula
- Provide electricity for a paper mill

Beirut, Lebanon Today

KANDA RIVER



High level of water pollution
Concrete walls delineating the river

CHEONGGYECHEON STREAM (2005)

SEMI-ARTIFICIAL

CLEAN / BIODIVERSITY



South Korea, Seoul SeoAhn Total Lansdcape Office • Project area: 5.84 km

IN BETWEEN

INCREASE GREEN SURFACES ENHANCE PUBLIC SPACE STORM-WATER MANAGEMENT

BEIRUT RIVER / tod proposal



Beirut, Lebanon Future MoEW & tOD

KANDA RIVER (2010)



Tokyo, Japan • Results: development of an Urban Forest

URBANIZED NATURAL

ATTEMPT TO RETURN TO NATURAL STATE NATURAL

NATURAL SERVICES PHYTOREMEDIATION BIODIVERSITY HABITAT





Riyadh, Saudi Arabia Moriyama & Teshima Planners & Buro Happold Design Office • Awards: Aga Khan Award for Architecture





- Washington, USA
- Largest dam-removal
- Restore Salmon Runs
- Restore the river ecosystem



* Developing locally adapted interventions.

PEOPLE

PEOPLE 👫 T

- public park
- social connection
- mental restoration
- equitable site use
- services to community

ENVIRON-MENT

SITE

redevelopment of degraded sites
pollution mitigation

- vegetated fence
 urban cooling effect
- materials
- neighborhood livability

VATER

- ecosystem services of river
- water cycle restoration
- stormwater management
- ground water recharge
 pollutants filtering
- green roof

ABITAT FAUNA & FLORA

- habitat conservation
- invasive plants control
- native plants conservation
- biodiversity park

SOIL

- healthy soils
- appropriate vegetation
- organic matter recycling
- on-site food production

ENERGY

renewable sources
 decentralized energy production
 buildings models for sustainability
 light pollution mitigation
 charging stations

MATERIALS

 sustainable materials
 use of salvaged materials and plants
 sustainable construction management
 permeable pavement Our Pilot Project is located around Bourj Hammoud and Badawi Neighborhoods





LOCATION & LANDUSE MAP



©Based on Nahr Beirut: Projections on an Infrastructural Landscape by Sandra Frem 2009



Social disconnection + Degraded environment + Derelict public space and accessibility

HAT ARE THE SITE CHALLEN-GFS?





Guidelines set the general direction of the interventions; however the specific interventions and their locations will be determined after the community engagement process

ARE OUR GUIDE-1.INFS?

GUIDELINES & PROPOSED INTERVENTIONS



BLUE-GREEN STREETS

Regenerate natural water cycle flows, include functional landscape, restore ecosystems & wildlife through Sustainable Urban Drainage Systems, which mimic nature by following natural systems to manage floods & reduce pollution.

BIODIVERSITY PUBLIC PARK

Provide space to the community for recreational activities and gatherings.

- Ministry of Energy and Water Park
- Bouri Hammoud Round-About

COMMUNITY ENGAGEMENT

Open an interface between locals and authorities. Raise awareness amongst residents on environmentally friendly solutions. Increase project durability & sustainability by engaging local community.

ACCESSIBLE STREETS

Improve mobility and make streets accessible for pedestrians & alternative modes of transportation. • Pedestrian bridge linking Bourj Hammoud and Badawi

ROOF AS SYSTEM

Use rooftops as spaces for gardens, vegetable gardens, wildlife habitat, rainwater collection & solar panels.

BIODIVERSITY REGENERATION

Integrate nature into living areas through biodiversity parks, open spaces, private spaces such as rooftops & balconies.

PROJECT LANDMARK

Create a structure as place-based Living Landmark using natural resources to highlight the project's approach.

BUILDING REHABILITATION

Upgrade & renovate buildings to improve their environmental performance and transform them into

PUBLIC PARKS

The left over open spaces in a city act as spatial opportunities for public interventions to encourage community interaction, engagement and recreational spaces. Those spaces can be transformed from abandoned and neglected islands to integrated biodiverse planted parks. Moreover they can include eco-structures that are self-sustaining, equipped with engaging information panels, solarpowered stations. This might result in a network of vegetated spaces, restoring the natural habitat, improving air, water and soil qualities. The overall interventions could improve people's attitudes toward natural areas and foster equity among them.



>> art installation



Tanner Springs Park, urban park with wetland focus, by Atelier Dreiseitl & GreenWorks PC and / PORTLAND'S PEARL DISTRICT



Brisbane Airport Kinetic Parking Garage Facade, by Ned Kahn, Hassel Studio, and UAP / BRISBANE AUSTRALIA



Suspended aluminum panels "A bee-headed woman" PARKING GARAGE FACADE MUSEUM OF ART

on the facade which fluctuates Pierre Huyghe's installation, integrating with the movement of the wind / art sculptures & living creatures / BRISBANE AIRPORT KINETIC LOS ANGELES COUNTY





If streets are designed to accommodate **more pedestrians**, **fewer vehicles** would be invading the city's main routes and more space would be available for the **community** to prosper. **Walkability in the city** is an important factor to introduce in city planning. **Improving mobility** and **safety of pedestrians** is necessary and alternative modes of transportation should be considered to **mitigate pollution emissions of vehicles**. Pedestrians should have access to different places without endangering their health and well-being. For this purpose, **pedestrian bridges** come in response to replace the missing links.



Streets that use **vegetated facilities** as **sustainable stormwater strategy** are referred to Blue-Green streets. They mimic natural systems to reduce flows, air and water pollution. By capturing, treating and storing water runoff, the natural water cycle is restored and groundwater recharge is sustained. The solutions offered by the best management practices are integrated within the city's existing grey water treatment. They provide cooling microclimates in the city, and increase neighborhood livability. They also recreate the landscape connectivity for wildlife movement, supports biodiversity conservation and enhances natural ecosystem functions.



>> Parking interventions

Oversized parking spaces could be adjusted to create space for **vegetated swales** between the parking lot and the street.

>> Median strips interventions

Long uninterrupted stretch of landscape can be converted into a structure **to capture and manage runoff**. These areas can be retrofitted to serve as vegetated swales.

Continuous strips of left over space can incorporate functional landscaped depressions while taking into consideration pathways adapted to pedestrians. **Flow-controls** can be inserted within swales like rocks and check dams to slow the flow of runoff.

Planters can fit in narrow street curbs between driveways. Dashed lines show where show where the planter could be added.

>> Side-walk interventions

Planters are incorporated in places where space is limited and a path for pedestrians is required. The concrete sides of the structure replace the side slopes typically used in swales, allowing for more storage volume in less space.

>> Street interventions

Underutilized spaces adjacent to streets can become appropriate locations for bio-retention basins and provide the greatest stormwater flow and volume benefit because of their large size.



BIODIVERSITY REGENERATION

Building rooftops can be seen as potential spaces for interventions. Rooftops could act as a **rainwater collector to harvest water**, a space to **produce the energy** needed for a building's needs, **a space for gardens** that can be used as **recreational areas**, or **vegetable gardens to produce food**. The resources obtained from the rooftops allow homeowners to be less dependent on the external sources of energy, water and food.

The fauna, flora and overall ecosystem of the river are degraded. The natural river has been transformed into a concrete channel receiving mostly wastewater from adjacent neighborhoods. There is a need to regenerate urban biodiversity.
The aim is to increase the area's vegetated surfaces and provide create green corridors. Choosing native species is a vital element to attract birds and pollinators and hopefully restore the natural habitat. The recreation of biodiversity scheme plays a role in improving the livability of the neighborhoods and the health of residents.





COMMUNITY ENGAGEMENT

Landmarks shape the overall images people keep in their memory about any project intervention. Creating a structure as a landmark would highlight the project, might increase locals' awareness on the interventions and improvements taken by the different parties (MEW, LCEC, tOD, UNHabitat) and might educate those interested on the new environmental technologies used. Some of the ideas for the landmark could include a Living Structure that uses natural resources such as a passive cooling system, a shelter, and/ or tower inscribed with a pollution and consumption indicator. In a context where interface between locals and authorities is semi-absent, environmental awareness is low and planning strategies are inadequate, community engagement becomes a fundamental tool to **improve urban interventions**. The aim is to **create human centered design strategies**, and **find locally adapted solutions** while **empowering human and natural resources**. The integration of the above mentioned elements result in an **effective and sustainable plan** and an inclusive sense of community that is just and equitable. **Communication** will result in an improved relationship among the different stakeholders, and a reinforced awareness and education.





CROSS-SECTION





PROJECT PARTNERS



The Lebanese Center for Energy Conservation (LCEC) is the national energy agency for Lebanon. LCEC is a governmental organization affiliated to the Lebanese Ministry of Energy and Water (MEW). LCEC is the technical arm of the Ministry in all subjects related to energy efficiency, renewable energy, and green buildings.

LCEC has succeeded in establishing itself as the main national reference on sustainable energy in Lebanon. It is the leading provider of energy efficiency and renewable energy programs to the public and private sectors in Lebanon. LCEC offers proven expertise and support to the Government of Lebanon (GoL) to develop and implement national strategies towards saving energy, saving money, reducing greenhouse gas emissions with the final target being to improve durability, safety and comfort of the Lebanese population.

LCEC is a financially and administratively independent organization and operates under the direct supervision of the Minister of Energy and Water.



The United Nations Human Settlements Programme (UN-Habitat) is the coordinating agency within the United Nation for human settlements activities, established in 1977, UN-Habitat is mandated by the United Nations General Assembly to promote socially and environmentally sustainable towns and cities with the goal of providing adequate shelter and living conditions for all. Amongst the themes the agency is engaged are; Urban Legislation, Land and Governance, Urban Planning and Design, Urban Economy, Urban Basic Services, Housing and Slum Upgrading, Risk Reduction and Rehabilitation and Urban Research and Capacity Development. The Agency is also mandated through the Habitat Agenda to take the lead in disaster, mitigation, and post-crisis rehabilitation capabilities in human settlements. UN-Habitat's global responsibilities in emergencies, humanitarian, and post-crisis response are to support national governments, local authorities, and civil society in strengthening their capacity for managing human-made and natural disasters affecting human settlements.

Within the Beirut River Watershed project, UN-Habitat will bring global experience on sustainable urban development, and have a specific role focusing on the development and implementation of neighborhood upgrading plans in the adjacent areas of the river.

TandemWorks

TandemWorks is engaging the communities living along the Beirut River in Bourj Hammoud and Badawi through focus groups and an installation by artist Vartan Avakian in the spaces of intervention. Our project culminates with the publication of a zine that will be distributed across these areas to reflect on people's relationship with the river and their perception of its future as well as to inform readers on the river's environmental impact and benefits.

MADE FOR BRANDS

Made For Brands' mission is to narrate the story of the Beirut River project in the most effective and impactful way. The first phase consists in building awareness on the project; touch people's heart and call for action. The second phase involves sharing knowledge on the interventions themselves and their direct impact on their surrounding. Then, the aim will be to relay the actions and increase their visibility online and offline to engage the larger communities.

Made for Brands studio (MFBstudio) is a studio specializing in storytelling for brands. Every brand and institution has a story to tell, we make sure it will be narrated in the most memorable and effective way.

Placing the user at the center of a story, we develop unique scenarios, in both real and virtual environments. We create concepts, and translate them into actual tools: brand strategy, mission, values, complete brand identities (360°), user experiences, events, sounds, and any action the story requires. The idea is to engage in a conversation between a user and a brand.

www.mfbstudio.com @mfbstudio f

DOCUMENT STRATEGY CREATED BY



Active since 2010, the architecture lab the0therDada defends an alternative position towards the current practice of sustainability through exploration of the context and medium, invoking new relationships between climate, landscape, and inhabitants. Informed by our research into biomimicry, we aim to connect to the natural ecosystems of sites to understand and consequently devise new potential living habitats. the0therDada works within a collaborative process between architects, scientists, botanists, artists, economists and craftsmen.

Sabbagh Bldg, 5th Flr, 47 Patriarch Howayeck St Beirut, Lebanon 11-5305 contact@theotherdada.com Tel: +9611976410





We believe in sustainability as being a collaborative effort

theOtherDada's design process is organic, dynamic and interactive. Informed by our research into BIOMIMICRY, we consider the world differently; like a system of RELATIONSHIPS and EXCHANGES, not like a system of isolated objects and actions.

WHAT WE DO ARCHITECTURE OF EXCHANGE

Every environment an architect confronts consists of architecture; the existing. Every site is meticulously organized and inhabited. Facing the complexity of this contemporary issue, our role lies in the thoughts of architectural impact by exploring the capabilities of context in producing new relationships.

ARCHITECTURE

Concept Design / Design Development / Execution Drawings

Focus Site's ecosystem, fauna and flora

INTERIOR DESIGN

Concept Design / Design Development / Execution Drawings



Focus Healthy & Sustainable Materials Indoor Air Quality

URBAN STRATEGIES



ra

Site's ecosystem, fauna, floand community integration



INNOVATION HABITAT

Research projects that are compiled on theOtherDada's blog.

BIOMIMICRY

The team can provide consultancy in biomimicry by looking at how nature functions and apply those solutions in different projects.

ENVIRONMENTAL RESEARCH

Depending on the location of each project, the team studies the urban biodiversity, specific biomes, conservation and protection practices. IF YOU'RE A ______ A STAKEHOLDER, TECHNICAL EXPERT, VOLUNTEER, COMMUNITY ACTIVIST, BOTANIST, GET IN TOUCH WITH US collaborate@theotherdada.com

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