COMUNE DI FERRARA
Città Patrimonio dell'Umanità

PERFECT
Interreg Europe

European Union
European Regional
Development Fund

PART I / GENERAL INFORMATION

PROJECT
PERFECT / Planning for Environment and Resource eFficiency in European Cities and Towns

PARTNER ORGANISATION CONCERNED
Municipality of Ferrara / Italy / ITH5

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PART II / POLICY CONTEXT

The Action Plan aims to impact:
☐ Investment for Growth and Jobs programme
☐ European Territorial Cooperation programme
X Other regional development policy instrument

NAME OF THE POLICY INSTRUMENT ADDRESSED
Council Structural Plan (CSP) / General Urban Plan (GUP)

FURTHER DETAILS ON THE POLICY CONTEXT AND THE WAY THE ACTION PLAN SHOULD CONTRIBUTE TO IMPROVE THE POLICY INSTRUMENT
Council Structural Plan (CSP) is the urban planning tool which defines the strategic choices of the city for the development and the protection of the territory. It includes "the green city", a strategic axis that considers the green spaces as an infrastructural network, an alternative city complementary to the existing one. This strategy was focused in increasing the surface of public green spaces, but now, after more than ten years, the interest has moved on the quality of GI network rather than the quantity. For this reason the target of the project concerns the improvement of the existing green capital, with more specific analyses on the benefits it can provide to the citizens.
At the end of December 2017, the Emilia-Romagna Region approved the "New regional law on land protection and use (LR. 24/2017)". This law modifies the planning instruments framework, including the CSP that will no longer exist. The new plan that the Municipalities have to approve in the next few years is called General Urban Plan (GUP). Today, the CSP is still effective but it can no longer be modified. Both plans don't manage financial resources.
This Action plan is an opportunity to influence the emerging urban plan making it a GI-oriented plan and testing a new strategic approach focused on ecosystem services and multy-benefits provided by urban green spaces, with the involvement of the stakeholders from the beginning of the planning activity.

To guarantee a concrete approach in the construction of the following actions, the AP aims to be a part of the new plan (a sort of annex) realizing a combination between strategic visions and practical contents to convert ideas into actions.
On overall the actions of new PUG lead to a policy change in strategic focus, as a matter of fact it will introduce the GI and ecosystem services concept and solution to different issues. For the urban context a selection of services has been done using the Magic Matrix. The Multi Advantages of Green Infrastructure in Cities (Magic) Matrix shows the multiple benefits related to the different GI, and the Action Plan addresses a third of the suggested benefits: Recreation & Tourism, Flood risk, Climate change Adaptation, Air Quality.
The Action Plan includes actions operating at the municipal level, to support the implementation of the overall strategy (Action 8 and Action 9) and site-specific actions to achieve the SDPI focusing on the aforementioned specific ecosystem services relevant for the city's districts.

SELF-DEFINED PERFORMANCE INDICATOR (SDPI)

20% public green space in the city of Ferrara to be enhanced through improved policies to deliver additional GI uses based on good practices learnt through PERFECT.
Due to the legislative framework change, the approach to the indicator has to be less real/material and more strategic, also because the ecological strategy will be one of the most important issue of the GUP, as the new regional law establishes.
To achieve the ambitious target (more than 130 hectares), different areas of interest have been identified at the beginning of the process, according with the dimensional goal. Green infrastructure in each of them has different role and potential. According to it, the stakeholders group worked to identify the proper action for each and to adapt to the context the lessons learnt thanks to Perfect.

ACTIONS

SITE-SPECIFIC

1 AREA 1 / VIA PADOVA
The linear forest of via Padova. Schools and communities activation for urban forestation

2 AREA 2 / QUARTIERE GIARDINO
Public spaces and green areas . Rethinking liveability, accessibility and safety

3 AREA 3-4 / QUARTIERE BORGOPUNTA
Green infrastructure and urban forestation.

4
Co-design table for the re-definition of the "Green City" strategy

5 AREA 5 / VIA BOLOGNA
Activation of schools and local communities for urban forestation

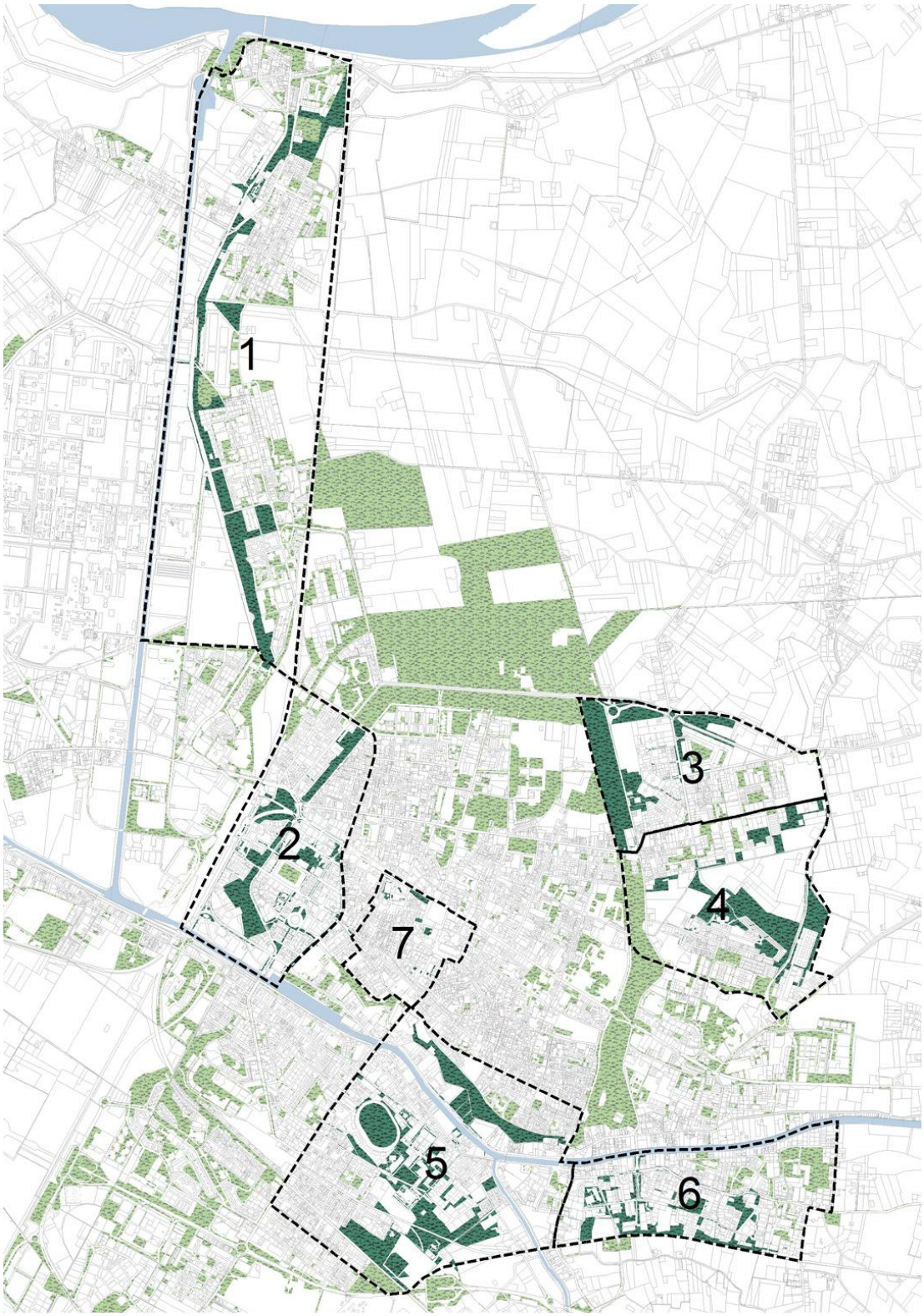
6 AREA 6 / VIA COMACCHIO
Green infrastructures in the neighborhood re-designing

7 AREA 7 / HISTORICAL CENTER
Public spaces and urban green infrastructure for the well-being of the inhabitants

8 URBAN GREEN INFRASTRUCTURE GEOREFERENCED DATABASE
Database for Urban Green Infrastructure planning and monitoring

9 CHANGING PEOPLE
Promotion of a 'positive culture' about trees through a communication campaign

THE SEVEN AREAS OF INTEREST



ACTION 1 / THE LINEAR FOREST OF VIA PADOVA

Schools and communities activation for urban forestation

1. RELEVANCE TO THE PROJECT

The study area is at north of Ferrara along the "Via Padova" main route, between the historical centre and the Po river, it includes the districts of "Barco" and "Pontelagoscuro".

"Via Padova" is one of the most important route axes of the city and it is also an industrial axis. The road connects the city to the Po river and it is 4 km long. On the west side of the road are located several industries, including a petrochemical district, and commercial areas developed from abandoned areas or from buildings of industrial archaeology converted to other uses. On the west side are located the Barco and Pontelagoscuro, two districts of working-class origin and a wholesale trade centre named "Diamante".

Among the road and inhabited area, Barco and Pontelagoscuro already exists a linear woody lines, with a variable width between 5 and 100 m. This green belt, between the petrochemical and the inhabited area, has been forested to protect the inhabitants of the two districts with compensation funds. Along the wooded area there are also some sports facilities with soccer fields and neighbourhood gardens.

This wooded buffer area currently has a variable width and the tree cover is about at 50%, with the remaining part covered by grass, spotted by some parking lots paved with cement and without shadow. The southernmost part of the wooded area is called the didactic forest, it is about 20 years old and it is the only dense area. In the northern part a portion of the wooded area is 4 years old, characterized by fruit trees and entitle to the Claudio Abbado a famous Italian conductor. In both areas are being implemented involvement processes of schools and citizens, thanks to the activities of residents and associations and the contribution of CEAS (Centri di educazione alla sostenibilità – CEAS, Sustainability education centers) and Urban Centre Ferrara.

Nearly 9,000 people live in the study area of Via Padova, of which 2,500 are elderly which is a category sensible to heat waves and air quality, and the Magic Matrix among the GI benefits shows robust evidence among Urban tree planting air quality and climate change adaptation. The action is part of the policy of use of GI as solution/mitigation to specific issues in different part of the cities.

The action, developed during the 3rd stakeholder meeting, is the activation of an education process to sustainability addressed to schools, aimed at an increase of urban forestation in Via Padova belt, as an adaptation measure to the climate change, compacting the forest where it is fragmented or absent, also including de-paving actions and by favouring green connections within the densest inhabited areas where the elderly population is concentrated.

How to activate the local communities in de-paving and urban forestation projects?
The experience of movements Depave

In different cities of the world there are movements and communities of citizens who promote bottom-up actions of de-paving and re-naturalization of the cities. These movements are independent and informal organizations, developed by citizens, acting in collaboration with the objective to relieve the environmental and social impacts of overbuilding and urban waterproofing. These action groups de-pave the excess urban asphalt to create green areas and permeable gardens able to collect rainwater, with also a purification action. Furthermore the de-paving enhance the biodiversity, the beauty of the neighbourhoods in which they live, the resilience of the city and the socialization of people.

The Depave groups have the aim to cities must revert to liveable places with an a human dimension in which people, flora and fauna live and coexist in a healthier environment: The cities must have a clean air and water, lush forests and urban parks, areas dedicated to social and local agriculture in which the community is active. The city renaturalization action of these associations pursues also the following community values:

- Promoting citizen participation and awareness;
- Acting for the community and encourage a growth process of the individual and of the group, based on self-esteem, self-efficacy and self-determination;
- Come to light latent resources and lead the individual to act consciously appropriately to his/her potential, reversing the perception of own limits in order of achieving results exceeding the expectations.

⋯⁘ RETHINKING GREEN INFRASTRUCTURE – Handbook of Perfect
⋯⁘ PSC5 AMSTERDAM (5-7 JUNE 2019) - Expert presentation ZOHO GUERRILLA RAINGARDEN
⋯⁘ PSC5 AMSTERDAM (5-7 JUNE 2019) – Study visit ORLYPLEIN

2. NATURE OF THE ACTION

The action will have three steps:

1. Training and awareness raising among children about the role of ecosystem services provided by trees and nature in general in the city benefitting the health and well-being of citizens; describing how the green infrastructure of the neighbourhood works and focusing on the priorities for the new General Urban Plan (PUG);
2. Preparation of the intervention strategy for the development of the green infrastructure of the neighbourhood, in accordance with phase 1 and based on the data collected for the implementation of the green areas database (action 8); inclusion of this strategic vision in the "Strategy for the Urban and Ecological-Environmental Quality "of the GUP;
3. Organization and development of urban forestation campaigns to be carried out with schools, families and residents of Barco and Pontelagoscuro districts.

During the first step will be experimented the game SOS4CITIES of ARPAE (Agenzia Regionale per la Prevenzione, l'Ambiente e l'Energia dell'Emilia-Romagna - Regional Agency for Prevention, Environment and Energy of Emilia-Romagna) involving the schools of Barco and Pontelagoscuro, with CEAS Ferrara and ARPAE. The game is addressed to students of first and secondary schools

and it is inspired to the experience of the REBUS simulation game, to the games on resilient city and on green infrastructures, as for instance the 'Planning game' of TCPA, and to Objective 11 Sustainable Cities and Communities of the UN's 2030 Agenda. The game SOS4CITIES After start with a short presentation of the climate change theme, its effects on the cities and the description of the most influence factors on urban micro-climate. The SOS4CITIES participants are the introduced to the game by describing the 'problem cards' and the 'solution cards' focused on the role of green infrastructures and nature based solutions. Once the teams have been formed the game starts and the ultimate goal is to correctly associate the cards. The winners of the game will be awarded with a stock of trees to be planted in the second phase.

How to raise awareness of the benefits generated by urban green infrastructures??
The experience of Planning Game from TCPA, London

The GI game, developed by the TCPA, gets participants to lay out images of a typical town centre and consider how GI can affect, say, flooding, access, or mobility by adding/removing/moving cards to improve a local area. Challenge cards are sheets of simple questions and participants are allowed 5 minutes to call out their responses. This means that no single view or person dominates.

Both techniques are non-technical and can be used across a wide audience. They can be used separately but work better when used together.

The technique is non-technical and not specific to any particular regulatory system and can therefore be adapted for use in other localities very easily.

- RETHINKING GREEN INFRASTRUCTURE – Handbook of Perfect
- PSC2 LJUBLJANA (11th -13th September2017) – Workshop exercise Planning game

During the third step a participatory urban forestry action will be planned, involving citizens, schools with families and residents through a raising awareness campaign.

The action implementation was the subject of a stakeholder meeting scheduled for September 5th 2019. All the stakeholders involved have already expressed interest and willingness to participate to a meeting to fine-tune the action that will implemented in 2020 and 2021.

3. STAKEHOLDERS INVOLVED

- Planning Office of the Municipality
- Green areas management Office of the Municipality
- ARPAE Emilia Romagna
- CEAS Ferrara
- Urban Center Ferrara
- Schools of Barco and Pontelagoscuro
- Associations of Barco e Pontelagoscuro

4. TIMEFRAME AND COSTS

- Timeframe:

2020 participatory process - schools lab

December 2020 drafting of the strategy and assumption of the GUP proposal by the Cabinet of the Municipality of Ferrara (timing provided by the regional law 24/2017)

2021 bottom up urban forestation and de-paving

- Indicative costs: 10-20,000€ for trees, de-paving, communications
- Indicative funding sources: funds from the "tree day" and Regional funds for forestation deriving from the rural development plan .

ACTION 2 / PUBLIC SPACES AND GREEN AREAS OF THE GARDEN DISTRICT

Rethinking liveability, accessibility and safety

1. RELEVANCE TO THE PROJECT

The study area is on the western edge of the historical centre. In the district live over 9,000 people of which about 2,500 are elderly, 2,500 foreigners and 400 infants. In comparison to the municipal average it is a very high population density, with a significative share of fragile population. Furthermore it is necessary to add the students frequenting the different University venues such as dorm and classroom and also the workers of various offices.

The area has a large extension of green areas laying down mainly along the historical walls. These are monumental GI of very high historical and cultural value, with plants of exceptional size and shape. The shape of the green infrastructure is mostly linear corresponding to the walls which in this part of city intersects the Garden district, the Station, the Skyscraper, the areas of the old Fortress and the docks, the system is integrated by district gardens.

In this portion the GI of the walls are unfrequented despite their qualities and the ecosystem services provided both of regulation and cultural, besides the area is subjected to petty crime. The area with the ramparts of the former Fortress is isolated from the neighbourhood due to the presence of wide roads and the extremely fragmented cycle and pedestrian paths. The public green areas of this part of the city are perceived as a place of degradation and petty crime. The determining factors are two:

- high concentration of people in a state of marginality;
- reduced accessibility to the green areas of the neighbourhood, which become areas of degradation and drugs traffic phenomena.

In this study area the urban regeneration, in particular social, can be implemented in targeted physical interventions on the green infrastructure, to restore centrality to this portion of the walls that from breach can turn into connection for the various population of the district.

The intervention must be planned considering the ecosystem service of water regulation supporting the sewerage which cannot stand intense rainfall.

How to combine green infrastructure and urban regeneration at the neighbourhood scale?
The case study of ZOHO Climate proof district, Rotterdam , Netherland

ZOHO is the pilot site for the implementation of the Rotterdam climate adaptation strategy on a district scale.

Zomerhofkwartier and Agniesebuurt are among the most vulnerable areas to rainfall, long periods of drought and heat waves. After years of decline, local entrepreneurs, professionals, creatives and neighbourhood associations have settled in ZoHo to experiment the area regeneration and alternative development models. The Zomerhofkwartier Climate proof initiative combines urban transformation with

innovative resilience measures based on the Rotterdam Adaptation Strategy.

The planned interventions on public space are of different types and based on the idea of a "sponge city". In particular the presence of rain gardens and permeable green areas allows the management of urban rainfall in widespread manner in order to relieve the existing sewerage. To implement this measure, vehicular mobility has been revised, inserting one way roads, reducing the sealed surfaces in car parks and adding vegetated ditches and gardens, which can improve the rainfall management.

The process included a deep analysis of the district climatic conditions and a series of workshops. Into the workshops the residents and professionals worked together to define specific strategies and a shared perspective to transform climate measures into an opportunity to improve urban quality of public space, improving the attractiveness and liveability of the neighbourhood.

PSC5 AMSTERDAM (5-7 JUNE 2019) – Expert presentation

2. NATURE OF THE ACTION

The action is structured in two steps. The first addressed mainly to the technicians of the Municipality of Ferrara, the second for information and consultation with the district and the Superintendence.

Step 1. It consists in activating a participation process of the different Municipal services, in order to drive the Strategy of the GUP addressing the Urban Environmental and Ecological Quality. The participation process will also address the connection of the slow mobility, the existing paths – sidewalks, cycle paths, grassy paths – are fragmented, they currently cross and should connect the green areas of the neighbourhood: the train station gardens, park of the Fortress walls, the skyscraper gardens and the districts nearby the walls. This connection of the slow mobility and of the public green areas will improve the fruition, vitality and attractiveness of the public space, and indirectly the safety and control.

The urban planning strategy for connecting public green areas must take into account multiple objectives:

- to develop a local neighbourhood strategy in compliance with the themes of the Emilia-Romagna Regional law. 24/2017 with particular attention to the qualification of the existing settlement system, accordingly with the Regional guidelines *'Liberare il suolo"* on de-sealing the urban areas, connection of infrastructures for slow mobility, continuity and contiguity of green infrastructures and green areas for water management, traffic moderation and the creation of permeable areas through nature based solutions;
- to favour the green areas fruition and recreation by citizens, improving road sign, routes with augmented accessibility according to the criteria of design for all, improving the shadow, lighting, and equipment;
- to tackle climate change through nature based solutions and the use of materials for roads that do not excessively absorb heat, de-paving of sealed soils and adding grass and other vegetation.

Foreseen Actions:

- survey to the district and green areas;
- mapping of the area and of existing and spontaneous paths;
- mapping of the critical issues and potential of the green infrastructure and draft of equipped green routes;
- intervention strategy draft for the enhancement of the green infrastructure and its inclusion in the "Strategy for Urban and Ecological-Environmental Quality" of the GUP;
- protocol with the Green areas management Office and Public works office in order to share the strategy, define the project meta-structures, agree on the action priorities and the actions itself;
- inclusion of specific actions in the three-year program of public works.

Step 2.

The second steps is participation of stakeholders outside the Municipality in particular the associations active in the neighbourhood and the Superintendence which is responsible for authorizations of interventions on the walls circuit. The objective is to share the project and to tailor the interventions in the final-executive planning phase.

3. STAKEHOLDERS INVOLVED

- Planning Office of the Municipality
- Green areas management Office of the Municipality
- Office for Infrastructure and mobility of the Municipality
- Environmental Wellness Office of the Municipality
- Monumental Heritage Office of the Municipality
- Culture and tourist Office of the Municipality

Second step:

- Superintendence for Fine Arts and Landscape – Operative Centre of Ferrara
- Public offices located into the neighbourhood
- Citizens and association of the neighbourhood

4. TIMEFRAME AND COSTS

- Timeframe: by December 2020 drafting of the strategy and approval of the GUP by the Council of the Municipality of Ferrara, accordingly the timing provided by the regional law 24/2017
- Indicative costs: personnel of the Municipality; 10,000€ for external assistance.
- Indicative funding sources: resources for GUP drafting.

ACTION 3-4 / GREEN INFRASTRUCTURE AND URBAN FORESTATION

Co-design table for the re-definition of the "Green City" strategy of the Borgo Punta

1. RELEVANCE TO THE PROJECT

The study area is the Borgo Punta District in the north-eastern corner of the city of Ferrara, include among Via Pannonio-Carli roads at north, the park of the walls at west, Via Turci at south and Via Carretti at East. In the district lives almost 6,000 inhabitants and the green areas are over 40 ha.

In the district insists diversified public green infrastructure:

- green areas cultivated with arable land along the roads of Via Gramicia, Pannonio, Carli and the channel of the Reclamation Consortium;
- the monumental park of the walls on Via Gramicia and Via Caldirolo;
- small green area in the neighbourhood;
- the urban vegetable gardens of Via Frutteti;
- the ecological rebalancing area of the Parchetto Schiaccianoci
- the public green partly acquired in the Municipal Operative Plan, partly used for sports and partly with the function of phytoremediation.

Altogether this complex of green areas constitutes a discontinuous ecological system which crosses and surrounds the northern and southern part of the district. Furthermore the green infrastructure have a low tree cover, concentrated mainly in linear form along the walls, in small scattered dots in the neighbourhood gardens and the only wooded mass is between Via Gerani and Via Caretti.

The study area was formerly divided into two sub-areas, Borgo Punta north and south, and lately harmonized in a unique urban forestation action in order shape a green infrastructure able to provide different services:

- mitigation to the heat island at the urban scale;
- regulation and management of heavy rainfall at the neighbourhood scale;
- regulation of dust and pollution mainly coming from the on the roads;
- strengthening of biodiversity;
- strengthening of cultural services related to the fruition of green areas.

The idea was developed during the 3rd stakeholder meeting and in preliminary discussion with the Reclamation Consortium, the Superintendence and the Natural History Museum analysing the ecosystem services provided and the local climate.

How to involve the Public Authorities to a Co-design table for the GI?
The case study of the project along the channel of Medicina in Bologna Province (Italy)

The Medicina channel runs through the city for almost 4 km. For about 1 km the canal is completely buried, it is in very poor structural and hygienic conditions. The presence of several subjects and the absence of a strategy has actually prevented the problem solution.

The co-design table of the project "Lungo il canale di Medicina" was promoted by the Municipality of Medicina as implementation of the first call of Urban Regeneration promoted by the Emilia-Romagna Region. The table had the duty to develop a complex project along the axis of the canal, rethinking a system of green and blue infrastructures for water purification, the restoration of natural habitats in urban areas, the construction of a new sewer system and consolidation of the channel. The co-design table worked on the proposal with progressive meetings. The actors working together were technicians of the Municipality (Urban Planning and Public works), hydraulic engineers and landscape architects, the Renana Reclamation Consortium, owner of the canal, the CON.AMI (Inter-communal Multiservice Company Consortium) owner of the infrastructures and the HERA Group a multiservice Company manager of the network.

The activity - coordinated by a negotiation expert and supported by expert technicians - allowed to define, in short time, the technical solutions and to sign commitments and agreements. The table was established permanently with the announcement of the award of the call for proposal (1,400,000.00 euros).

⋯⁘ Good Practice of Perfect Handbook *Rethinking green infrastructure* by Municipality of Ferrara

2. NATURE OF THE ACTION

The action foresees to activate a co-design table among the competent Public Authorities – Municipality of Ferrara, Emilia-Romagna Region, Superintendence, Reclamation Consortium, Natural History Museum and local landowners– to verify the forecasts of urban forestation of the Municipal Structural Plan in order to implement Green Infrastructure at urban scale. The following offices must be involved in the project: green spaces, planning and public works of the Municipality of Ferrara that operate on the maintenance and implementation of this typology of works.

The action aims to develop a landscape co-design strategy for the forestation of the area, accordingly the objectives of the Regional law 24/2017, with particular attention to the "Strategy for the Urban and Ecological-Environmental Quality " of the GUP redevelopment of the settlement system through nature-based solutions to mitigate climate change and air pollution. The co-design table will work through structured and progressive workshops, on intensive days (or half days), sharing the knowledge on the places, the definition of a strategic vision, the evaluation of the alternative intervention options. With this methodology will be reached an agreement among the stakeholders aimed at implementing the subsequent planning stages and funding the green infrastructure with both private and public funds starting from the funds for forestation of Rural Development Plan.

From the preliminary meetings and the stakeholders meetings of December 2018 and July 2019, came to light specific table objectives and themes to be discussed at the co-design table. The visions and objectives of the stakeholders do not always match each other and the Table will have the purpose of reaching a common strategy:

- The point of view of the Municipality of Ferrara. The system of the areas represents an extraordinary opportunity to verify the forecasts of the Municipal Structural Plan on environmental issues (climate, ecology, hydraulic safety, urban forestation) and the action will have to provide recommendation and measures both for the design and for the acquisition of the private land in which to implement forestation.
- The point of view of the natural history museum. The area, thanks to drainage channels and the extension of grassland, represents a good opportunity to experiment an ecological infrastructure suitable for spontaneous flora and fauna and to contrast the greenhouse gases harmful to human health. The roads represent fragmentation elements, for the wild fauna - for which mitigation and crossing will have to be foreseen - and for the citizens, because of the emissions due to vehicular traffic, therefore should be foreseen woods able to stock CO_2 and adsorb Particulate Matter.
- The point of view of Reclamation Consortium. The system which is in part of green areas not usable and partly agricultural is an opportunity to experiment controlled flooding areas that can contribute to the hydraulic safety the city and enhance security to be verified with data on the hydraulic issues of the neighbourhood.
- The point of view of the superintendence. These areas are located in the margin of the monumental system of the monumental Walls but within the UNESCO perimeter, in one of the few and rare sections where the walls are visible. Forestation interventions will have to preserve privileged views towards the Walls, while from the Walls towards Borgo Punta they will have to perform a function of reducing the view of the skyline of the neighbourhood.

The co-design table will be implemented trough progressive steps for about two years:

- stakeholder meeting, preliminary meetings and formal foundation of the co-design table;
- common site inspection;
- workshop to map main issues and sharing of benefits of public green spaces with particular reference to the "Strategy for the Urban and Ecological-Environmental Quality "of the GUP;
- funding opportunity from CAP and of Rural Development Plan;
- meetings to introduce the theme to the local landowners;
- drafting and subscription of co-design agreement.

How to combine green infrastructure and urban regeneration at the neighbourhood scale? The case study of ZOHO Climate proof district, Rotterdam , Netherland

ZOHO is the pilot site for the implementation of the Rotterdam climate adaptation strategy on a district scale. Zomerhofkwartier and Agniesebuurt are among the most vulnerable areas to rainfall, long periods of

drought and heat waves. After years of decline, local entrepreneurs, professionals, creatives and neighbourhood associations have settled in ZoHo to experiment the area regeneration and alternative development models. The Zomerhofkwartier Climate proof initiative combines urban transformation with innovative resilience measures based on the Rotterdam Adaptation Strategy.

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PSC5 AMSTERDAM (5-7GIUGNO 2019) – Expert presentation

3. STAKEHOLDERS INVOLVED

- Planning Office of the Municipality
- Green areas management Office of the Municipality
- Office for Infrastructure and mobility of the Municipality
- Reclamation Consortium "Pianura di Ferrara"
- Superintendence for Fine Arts and Landscape – Operative Centre of Ferrara
- Natural History Museum of Ferrara
- Emilia-Romagna Region
- Landowner of agricultural areas

4. TIMEFRAME AND COSTS

- Timeframe:

  2020 co-design of the agreement and strategy definition

  December 2020 drafting of the strategy and assumption of the GUP proposal by the Cabinet of the Municipality of Ferrara (timing provided by the regional law 24/2017)

- Indicative costs: the cost for external consultants for the co-design and the cost of the works will be evaluated during the co-design
- Indicative funding sources: public resources from various sources including measures of Rural Development Programme.

ACTION 5 / GREEN INFRASTRUCTURE OF VIA BOLOGNA DISTRICT

Activation of schools and local communities for urban forestation

1. RELEVANCE TO THE PROJECT

The study area is included between "Via Baluardi", the Volano river, the Hippodrome and Rivana area. It is a very large urban area densely built and inhabited.

Green infrastructure are well represented but of poor quality in terms of ecosystem services provided, particularly in regulation services. The GI are mainly grass and the woody areas have a low tree cover, with a poor contribution to the impacts of the urban heat island, accentuated during heat waves, as well as for the air quality in particular for dust regulation.

The green areas of the neighbourhood can be clustered in four types:

- large green areas such as the park of the walls and the areas of the hippodrome;
- linear green area, including the marginal areas nearby the river banks;
- agricultural areas and peri-urban uncultivated areas, the Rivana and the areas enclosed along the railway:
- widespread green areas in the neighbourhood such as micro-gardens, vegetable gardens and small public spaces in the heart of the neighbourhood, between residences and schools. These have also partial function of connection to the other types of public green areas.

Into the district live almost 9,000 people, of which 2,500 elderly, about 1,000 foreigners, and over 200 infants. This is a high population density compared to the average in Ferrara, with a very important percentage of fragile population. This population is concentrated mainly in the centre of the neighbourhood, where concentrated the small grassy areas that connect the hippodrome to the north and the Rivana areas to the south.

The action foresees a process of urban forestation of public green areas as a measure of adaptation to the climate change, of social integration and of food self-production, favouring green connections within the densest inhabited areas, where the most fragile population is concentrated and in which the forested areas are very poor or even not even present.

The action is formulated in analogy with the action 1 related to area 1 which was alto the subject of the 6th stakeholder meeting. It is the in starting of an education to sustainability process addressed to the schools and the third sector, as a means to promote consensus and awareness of the population towards the prediction in the GUP and Strategy of the Urban Environmental and Ecological Quality. The action aims to stimulate the growth of forms of self-management of green spaces favouring also forms of food self-production, with orchards, vegetable gardens and shared neighbourhood gardens.

How to activate the local communities in de-paving and urban forestation projects?
The experience of movements Depave

In different cities of the world there are movements and communities of citizens who promote bottom-up actions of de-paving and re-naturalization of the cities. These movements are independent and informal organizations, developed by citizens, acting in collaboration with the objective to relieve the environmental and social impacts of overbuilding and urban waterproofing. These action groups de-pave the excess urban asphalt to create green areas and permeable gardens able to collect rainwater, with also a purification action. Furthermore the de-paving enhance the biodiversity, the beauty of the neighbourhoods in which they live, the resilience of the city and the socialization of people.

The Depave groups have the aim to cities must revert to liveable places with an a human dimension in which people, flora and fauna live and coexist in a healthier environment: The cities must have a clean air and water, lush forests and urban parks, areas dedicated to social and local agriculture in which the community is active. The city renaturalization action of these associations pursues also the following community values:

- Promoting citizen participation and awareness;
- Acting for the community and encourage a growth process of the individual and of the group, based on self-esteem, self-efficacy and self-determination;
- Come to light latent resources and lead the individual to act consciously appropriately to his/her potential, reversing the perception of own limits in order of achieving results exceeding the expectations.

⋯⁘ RETHINKING GREEN INFRASTRUCTURE – Handbook of Perfect

⋯⁘ PSC5 AMSTERDAM (5-7 JUNE 2019) - Expert presentation ZOHO GUERRILLA RAINGARDEN

⋯⁘ PSC5 AMSTERDAM (5-7 JUNE 2019) – Study visit ORLYPLEIN

2. NATURE OF THE ACTION

The action will have three steps:

1. Training and awareness raising among students and young population about the role of ecosystem services provided by trees and nature in general in the city benefitting the health and well-being of citizens; describing how the green infrastructure of the neighbourhood works and focusing on the priorities for the new General Urban Plan (GUP);
2. Preparation of the intervention strategy for the development of the green infrastructure of the neighbourhood, in accordance with phase 1 and based on the data collected for the implementation of the green areas database (action 8); inclusion of this strategic vision in the "Strategy for the Urban and Ecological-Environmental Quality "of the GUP;
3. Organization and development of urban forestation campaigns to be carried out with schools, families and residents.

During the first step will be experimented the game SOS4CITIES of ARPAE (Agenzia Regionale per la Prevenzione, l'Ambiente e l'Energia dell'Emilia-Romagna - Regional Agency for Prevention, Environment and Energy of Emilia-Romagna) involving the schools of the neighbourhood, with CEAS

Ferrara and ARPAE. The game is addressed to students of first and secondary schools and it is inspired to the experience of the REBUS simulation game, to the games on resilient city and on green infrastructures, as for instance the 'Planning game' of TCPA, and to Objective 11 Sustainable Cities and Communities of the UN's 2030 Agenda. The game SOS4CITIES After start with a short presentation of the climate change theme, its effects on the cities and the description of the most influence factors on urban micro-climate. The SOS4CITIES participants are the introduced to the game by describing the 'problem cards' and the 'solution cards' focused on the role of green infrastructures and nature based solutions. Once the teams have been formed the game starts and the ultimate goal is to correctly associate the cards. The winners of the game will be awarded with a stock of trees to be planted in the second phase.

How to raise awareness of the benefits generated by urban green infrastructures??
The experience of Planning Game from TCPA, London

The GI game, developed by the TCPA, gets participants to lay out images of a typical town centre and consider how GI can affect, say, flooding, access, or mobility by adding/removing/moving cards to improve a local area. Challenge cards are sheets of simple questions and participants are allowed 5 minutes to call out their responses. This means that no single view or person dominates.

Both techniques are non-technical and can be used across a wide audience. They can be used separately but work better when used together.

The technique is non-technical and not specific to any particular regulatory system and can therefore be adapted for use in other localities very easily.

- RETHINKING GREEN INFRASTRUCTURE – Handbook of Perfect
- PSC2 LJUBLJANA (11th -13th September2017) – Workshop exercise Planning game

During the third step a participatory urban forestry action will be planned, involving citizens, schools with families and residents through a raising awareness campaign.

3. STAKEHOLDERS INVOLVED

- Planning Office of the Municipality
- Green areas management Office of the Municipality
- ARPAE Emilia Romagna
- CEAS Ferrara
- Urban Center Ferrara
- Schools
- Associations of the neighbourood

4. TIMEFRAME AND COSTS

- Timeframe:
  - April/May lab with schools
  - December 2020 drafting of the strategy and approval of the GUP by the Council of the Municipality of Ferrara, accordingly the timing provided by the regional law 24/2017
  - 2021 bottom up urban forestation
- Indicative costs: 10-20,000€ for trees, de-paving, communications and organizations
- Indicative funding sources: funds from the "day of the tree", Regional fund for forestation from Rural Development Programme.

ACTION 6 /GREEN INFRASTRUCTURES IN THE NEIGHBORHOOD RE-DESIGNING

Participatory process and Green Infrastructure co-design in the suburban area of the recent urbanization of 'Via Comacchio'

1. RELEVANCE TO THE PROJECT

The suburban area of pilot area n. 6, "Via Comacchio", lays in the south-eastern corner of the city, it is a recently urbanized residential area, built from the late '90s up to nowadays.

It is mainly a residential neighbourhood, with buildings and houses with medium/low population density, with terraced types, single, double and for four families houses, and flats complexes. In the area there are also construction sites in some cases under bankruptcy curatorship. The northern part is bordered by the river and the southern by the railway, beyond it lays the countryside with agricultural field. "Via Comacchio" is at the center of the neighbourhood.

Public services, facilities and urban green of the neighbourhood of "Via Comacchio" are extremely fragmented and poorly used by people. The city has grown in this area as a result of allotment in compliance with the regulations and standards related to the regional urban planning law. Nevertheless the urban design was not oriented to urban environmental quality and to the creation of Urban GI able to cope with the climate change issues. The only exception to this system of fragmented public spaces is the green belt bordering to the railway. This buffer strip was foreseen by the plan and implemented in stages, it is in the southern part of the neighbourhood, it is about 1 km long, with few fragmentations, and it has an average width of about twenty meters.

The total public green spaces of the neighbourhood are 12 hectares, of which almost half are concentrated in the buffer strip near the railway, and the other half among "via Capodistria", "via Comacchio" and the river. However, these areas are essentially grassland, with the presence of few plants and of young age. The trees and shrubs are concentrated along the roads, whenever the space is available, and in the area close to the railway. Also the private green area scarce, above all in some allotment, that have maximized the building capacity.

The idea of re-designing the GI of this neighbourhood with citizens and local associations was born during direct field survey that the Perfect group conducted on the area and following the presentation of the areas and inherent problems in the 3rd stakeholders meeting.

The action was inspired by the first exchange of good practices between partners (February 2018). Amsterdam proposed the redevelopment of Noorderpark based on accessibility and the creation of better connections, to make the park accessible to the inhabitants of the neighborhood. On the occasion of the fifth meeting it was possible to visit the area and deepen some implementation aspects. The experience seemed compatible with the context and the morphology of the green

infrastructure in this study area, continuous and linear but currently not used, in a recently built neighborhood, tangent to the monumental system of the Ancient Walls (much used but not equipped for reasons of constraint). Also during the fifth Partner Meeting in Amsterdam, the debate during the peer group focused on the processes of empowering local communities to improve the neighborhood's green infrastructure.

At the design level, the study visit at the "River Sava recreational and Educational Center" (PSC2 - Ljubljana 13 September 2017) was a great inspiration, as an excellent example of a linear system of sports and recreational facilities.

How to improve the health and life quality of citizens with Green Infrastructure?
The case study of the Noorderpark in Amsterdam (Netherlands)

Investments in city park 'Noorderpark' are being made including more facilities, improved park entrances, improved biodiversity, better connections and accessibility, to cope with the changing lifestyles of Amsterdam's inhabitants and the growth of the city and the large number of visitors. Investments in the park will improve business climate, lessen the impact of increasing number of people, reduce impacts of climate change, and improve design of the park for recreation, biodiversity and health.

The Noorderpark is surrounded by low income neighborhoods. Investments in the park will increase the quality of the park and will among others make it more attractive for local residents, which may lead to beneficial health impacts.

Investments in Noorderpark will bring benefits not only in health, wellbeing, recreation and biodiversity, but also will be a support for community integration and creation of new jobs.

- Good Practice of Perfect by City of Amsterdam
- PSC5 AMSTERDAM (5th -7th JUNE 2019) – Study visit

2. NATURE OF THE ACTION

The action is addressed to the administrators and technicians of the Municipality of Ferrara, to the resident citizens and to the associations that operate or could operate in the area and consists in activating a process of citizens' involvement and co-design, finalized to the definition of the Ecological Strategy of the GUP.

The GI should improve ecosystems services, in particular for climate change adaptation and biodiversity. Into the action implementation will be involved the offices for green spaces, sports, planning and public works of the Municipality of Ferrara that operate on the maintenance and implementation of this typology of works.

The action has the objective of co-designing with the citizens and associations a green, a ring-shaped pathway able to connect public green spaces. The process aims to achieve objectives of urban, environmental and health quality with the development of a local neighbourhood strategy - in line with the objectives of the Regional law 24/2017 - with particular attention to the redevelopment of the settlement system through nature-based solutions to connect and enhance public green

spaces and to mitigate climate change issues, such as heat waves, water retention and soil permeability to improve human health and life quality. The social quality objectives of the action concern the strengthening of the neighbourhood community through the co-design of the new Green Infrastructure and sports facilities besides the involvement of the citizens in a collaboration pact for the spaces co-management.

The process will be activated trough progressive steps, for about two years:

- listening and social mapping of the neighbourhood;
- knowledge tour with the citizens and mapping of the criticality and potential of the existing green areas of the neighbourhood;
- design of the local strategy for the Green Infrastructure of the neighbourhood with the citizens and the administration;
- preparation of the intervention strategy for the development of the green infrastructure of the neighbourhood; inclusion of this strategic vision in the "Strategy for the Urban and Ecological-Environmental Quality "of the GUP;
- co-planning of the green ring - trees and shrubs, soils, signs, routes, shade, lighting, facilities - with the citizens and the administration;
- information and communication to citizens and coordination meetings with the competent offices;
- promotion of forms of co-management of the common spaces.

The first operational activity will be the institution of a table among the Municipality offices and local stakeholders for the co-financing of the process with the regional call for tenders – Regional law. 15/2018 concerning participation.

How to involve the citizens into a co-design table for the GI?
The case study of former quarry "Incal System" of Rimini (Italy)

The co-design process to rethink and redesign the former quarry "Incal System", a large suburban public green area of 37 hectares, was developed by the Municipality of Rimini thanks to a process of citizen involvement, designed for progressive steps and with different methods of listening and discussion, with a dual purpose:

- share the uses of the park;
- co-design the landscape transformation project.

The participation activity - coordinated by a team of facilitators and planner - allowed to define the use guidelines, reducing the time necessary for technical planning and guiding the plan to an overall forestation and naturalistic engineering works in order to promote the site biodiversity.

The process has also fostered a collaborative climate among the Administration and citizens who, together, have also defined the area management regulation and possible forms of engagement.

Good Practice of Perfect by Handbook *Rethinking green infrastructure* by Municipality of Ferrara

3. STAKEHOLDERS INVOLVED

- Planning Office of the Municipality
- Green areas management Office of the Municipality
- Urban Center Ferrara
- Office for Infrastructure and mobility of the Municipality
- Sport Office of the Municipality
- Citizens and association of the neighbourhood
- Sport Associations

4. TIMEFRAME AND COSTS

- Timeframe:
  - 2020 starting of participatory process
  - December 2020 drafting of the strategy and assumption of the GUP proposal by the Cabinet of the Municipality of Ferrara (timing provided by the regional law 24/2017)
  - 2021 starting of co-design phase
- Indicative costs: approximately 20 thousand euro for participatory process; 300 thousand euro for GI
- Indicative funding sources: public and private, to be evaluated (e.g. regional call for tenders – Regional law. 15/2018 concerning participation)

ACTION 7 / PUBLIC SPACES AND URBAN GREEN INFRASTRUCTURE FOR THE WELL-BEING OF THE INHABITANTS OF THE HISTORICAL CENTER

Guidelines and criteria for the development of strategy of the General Urban Plan (GUP) in the historical centre addressing Urban and Ecological Quality

1. RELEVANCE TO THE PROJECT

The study area is the historical centre of Ferrara, between "Viale Cavour" and "Via Baluardi". The area hosts several paved parking lots, mineral squares, some gardens and a system of urban pedestrian streets and open spaces connecting the most important monuments of the city, such as the Estense Castle, the Cathedral, the Municipal Palace and the Municipal Theatre.

The dense urban morphology of the historical centre plus the climate of Ferrara - one of the most uncomfortable in Italy - pose a risk for the people health living or visiting the centre. As a matter of fact during the summer high temperatures, due to the urban heat island, are associated to heat waves and humidity peaks.

In the study area of the historical centre live about 2900 people, and it coincides with the core area with the highest tourist vocation, with a tourists flow close to 200,000 people a year. Due to the urban morphology, the visiting and living population is often in health emergency conditions due to heat, which occurs frequently during the summer and for several consecutive days. It is worthwhile to mention that in the summer of 2017 - one of the worst in terms of climate – the Emilia-Romagna Region suffered of six heat waves and the city of Ferrara recorded the highest summer temperatures in the entire Italian peninsula. On average each heat wave lasted 4-5 days, therefore in the period mid of June and mid of August 2017 the thermal discomfort lasted about 30 days, corresponding to 1 month out of 2. In the study area the most fragile component of the population on 2900 residents about 700 are elderly, 100 are children and almost 500 foreigners. This data are particularly important since in the historical centre the impacts of the heat wave are greater than in the rest of the city and impact above all the lower classes, the elderly, the sick, the cardiopathic, the infants and people with psychiatric problems .

The GUP represent the "PERFECT policy instrument" and the action - developed during the 4th stakeholder meeting (June 19th, 2019) and in association with the Superintendence - consists in defining the guidelines and criteria for the development of strategy of the General Urban Plan (GUP) in the historical centre of Ferrara addressing Urban and Ecological Quality.

The Superintendence for Fine Arts and Landscape – Operative Centre of Ferrara is a local office of the Ministry of Cultural Heritage, therefore for the historical centre of Ferrara represents a key stakeholder for any kind of plan or project.

How to design green Infrastructures in historical contexts?
Bratislava Karlova Ves' experience – lessons from PERFECT work shadowing

The difficulties of creating GIs in historical contexts due to the scarcity of public spaces to be transformed and the severe restrictions of public bodies responsible for protecting cultural and historical heritage allow only small initiatives. The municipality of Bratislava Karlova Ves knows it well and the work shadowing and study tour organized for the PERFECT partners of Ferrara has also focused on this issue.

In the late 1900s, much of the greenery in the Bratislava squares was removed to recreate the medieval market and the main squares were paved. The trees were finally replanted in 2016 as part of a climate change adaptation project, but it was a hard work due to bureaucratic, technical and technological problems (authorization of public offices responsible for cultural and historical heritage, construction of excavations, trees deep root systems, etc).

Despite few trees planted, in these squares passers-by can enjoy the shade and get some relief in the summer heat. Beneath the trees, comfortable and well-sized benches with an appealing design favor permanence and stimulate important moments of social aggregation.

Work shadowing in Bratislava Karlova Ves – 29-31/05/2018

2. NATURE OF THE ACTION

The action consists in defining the Guidelines and criteria for the development of strategy of the General Urban Plan (GUP) in the historical centre ("Strategia per la Qualità Urbana ed Ecologico-Ambientale" - SQUEA), which the Urban Planning Law of the Emilia-Romagna Region (LR. 24/ 2017) has made mandatory for the new plan.

The action aims to develop a steering document addressing in particular the redevelopment of the centre's settlement system to tackle climate change, specifically the phenomena of the heat island and heat waves. The action goal is to develop a green infrastructure in the centre to mitigate climate change and to improve people's well-being. The criteria to be developed will define guidelines for the transformation of public space, introducing, where possible, green areas, gardens, shaded streets and squares and tree-lined parking lots, as well as points with water and changes into paving materials.

The action will involve primarily the Planning and Green sector offices of the Municipality of Ferrara, responsible for the GUP, and the Superintendence which protects and authorizes the transformation of public space and building in the historic centre. The subjects involved in the action will work through survey and inspections and structured moments of discussion, sharing the knowledge of the places and the objectives of the strategy for the centre and the definition of intervention hypotheses on public spaces.

The group's activities foresee:

- stakeholder meetings;
- preliminary meetings;

- shared surveys and mapping of criticalities and potentials of public spaces within the study area;
- drafting the guidelines for the SQUEA of the General Urban Plan.

3. STAKEHOLDERS INVOLVED

- Planning Office of the Municipality
- Green areas management Office of the Municipality
- Office for Infrastructure and mobility of the Municipality
- Superintendence for Fine Arts and Landscape – Operative Centre of Ferrara

4. TIMEFRAME

- Timeframe participatory process: December 2020 drafting of the strategy and assumption of the GUP proposal by the Cabinet of the Municipality of Ferrara (timing provided by the regional law 24/2017)
- Indicative costs: costs to be assessed on GUP resources
- Indicative sources of financing: public GUP resources

ACTION 8 / URBAN GREEN INFRASTRUCTURE GEOREFERENCED DATABASE

Database for Urban Green Infrastructure planning and monitoring

1. RELEVANCE TO THE PROJECT

The municipality of Ferrara elaborates and updates the georeferenced maps of the green spaces and links a lot of information to these maps, using G.I.S. technology.[1]

Currently green spaces of Ferrara Municipality are classified accordingly the ISTAT (National statistics institute) categories to monitor the green spaces heritage; this classification don't allow to identify the Ecosystem Services (ES) provided. So it is necessary to integrate the database with qualitative and quantitative information of the ES[2].

The idea of an experimental database on Urban GI of the city of Ferrara, is born in respect to the experience of the project "Tools for Planning and Evaluating Urban Green Infrastructure: Bicester and Beyond" presented during the study visit of the First Meeting of Perfect by a professor of Oxford University.

How to set up a green infrastructure georeferenced database?
The case study of Tools for Planning and Evaluating Urban Green Infrastructure: Bicester and Beyond

The experience of Bicester is inspiring for different points: the matrix of scores (scale 1-5), the analysis of the ability of each land use type to supply each service, the comparison finalized to identify the priority of the different ecosystem services. The Bicester's Good Practice was a practical implementation of Green Infrastructure's evaluation at urban scale. The Bicester's Good Practice has a scale and a level of details similar to the Municipality of Ferrara.

Besides the scale and detail the Bicester's Good Practice presents a practical scoring systems with basis from consolidated literature data.

PERFECT – Partner Steering Committee (PSC) meeting 1 ; 6th-9th February 2017 London and Bicester

https://www.interregeurope.eu/fileadmin/user_upload/tx_tevprojects/library/file_1526373803.pdf

The Bicester Experience represents an opportunity to replicate but applying all the necessary adaptation to the specific context of Municipality of Ferrara.

[1] A geographic information system (GIS) is a system designed to store, manipulate, analyse and manage geographic data. GIS applications are tools that allow users to create interactive queries, analyze spatial information, edit data in maps, and present the results of all these operations

[2] To integrate the database it was decided to use the CICES classification (Common International Classification of Ecosystem Services)

Another element learnt thanks to the Perfect Project that will help us to define the quality of our strategic areas is the Magic Matrix. In particular the *gi intervention / gi Matrix benefits* help us to chose intervention priorities to improve existing green areas. The Ecosystem Services (ES) knowledge in recent years evolved fast in particular at urban scale, the Magic Matrix will be the starting point for the ES selection at Urban scale.

What is the PERFECT MAGIC Matrix ?

The Magic (Multi Advantages of Green Infrastructure in Cities) Matrix was developed by TCPA to provide PERFECT partners with good practice examples of multi-use, multi benefits and multi-impacts of green infrastructure.

The aims of Magic Matrix are:

- To act as a guidance document to help project Partners:

- To communicate the benefits of Green Infrastructure to the target audience

- To present a simple, limited and clear set of benefits which are most likely to be relevant to decision makers

The magic matrix shows how a specific type of intervention (or action or investment) will deliver multiple benefits.

The columns of the matrix represent the GI intervention (such as: green roof, SUDS scheme, green space creation, wetland creation etc), while in the rows are listed the most relevant benefits (the benefits are divided in 4 group, socio- economic , climate change, environmental, biodiversity). The list of GI benefits is based on those listed in *Building a Green Infrastructure for Europe* (European Commission , 2013). Each intervention is given a score that quantifies its impact on any potential benefit.

PERFECT – PSC , meeting 2 - 11th-13th September 2017 Ljubljana

https://www.interregeurope.eu/fileadmin/user_upload/tx_tevprojects/library/file_1526373149.pdf

Furthermore, existing green infrastructure map would be in compliance with the urban planning and environmental laws both at regional and national level. These regulatory apparatus stress the power of the GIS as technical tool to improve the analysis strength, the assessment, planning and management of Urban GI and related ES.

Furthermore, thanks to the integration of maps and data the GIS has a huge potential for communication with citizens respectfully the Urban GI and the ES provided.

2. NATURE OF THE ACTION

The aims of this action are:

- to provide an operational, clear and articulated tool of green infrastructure data and of potential ecosystem services provided by them, that can force and influence policy decisions;

- this new approach to define and evaluate green infrastructures should be disseminated in the drafting of all general urban plans and also should be taken into account in the detailed planning. The GI database will be part of the cognitive framework of the new Ferrara general urban plan (GUP). The database will be the support tool for strategic decision during the writing of the GUP as well as for decision making during the plan implementation:

- to support the work of other municipal offices (environmental office, green space management office, mobility office) and of stakeholders in their activities;

- to initiate and raise awareness among citizens by publishing interactive maps on the web;

- to use the database in participatory processes to accept ideas and design micro-operations for green areas.

The database focuses on the seven strategic pilot areas identified into the city of Ferrara, in which occur more than 140 ha of public green spaces. The type and quality of the GI has been verified with direct field survey of the Planning Office Perfect team.

The following operational actions are foreseen:

- Selection of Ecosystem services and creation of the *GI/ ES provided* matrix. the choice of ecosystem services, the matrix will be made on the basis of the territorial context, of our policy instrument and of what we learnt from the Perfect magic matrix;
- To match, harmonize, integrate the existing GI database with the new data and classification;
- Representation of Ecosystem Services;
- The action implementation and monitoring, in synergy with Action 9;
- Design and development of a graphical interface before the use from external users;
- Communication and information activities on the use of the platform.

3. STAKEHOLDERS INVOLVED

The action will initially be developed by the offices of the Municipality of Ferrara with the collaboration of Natural History Museum; in particular, a researcher of the Museum will help us to identify ecosystem services and to evaluate potential GI scores in terms of ecosystem services provided. The action will be extended in the second phase to other external stakeholders for the improvement of the database.

- Planning Office of the Municipality (Perfect team with the support of: GIS expert, web graphics ecosystem services expert) - involved in all the operational actions;
- Green areas management office of the Municipality;
- ICT Office;
- Culture Office of the Municipality;
- Sport Office;
- Natural History Museum.

4. TIMEFRAME AND COSTS

- Timeframe: 3 years
  - End 2019 : first release of GI database
  - 2020-2021 : implementation GI Database and monitoring

  The database will be the support tool for strategic decision during the writing of the GUP as well as for decision making during the plan implementation: 25.000 euro (database and cartography development, expert advices, web- publication)

- Indicative funding sources: internal resources.

ACTION 9 / CHANGING PEOPLE

Promotion of a 'positive culture' about trees through a communication campaign

1. RELEVANCE TO THE PROJECT

The action consists in conceiving, developing and implementing a communication campaign to promote a positive culture on the presence of trees in the city.

The Green area management Office of the City of Ferrara constantly receives citizens' complaints about the presence of trees in the city (the leaves obstruct the drainpipe, dirty the car, dirty the ground, steal parking spaces, etc.). Nevertheless trees provide important services for urban citizens but they do not know (or do not know enough) how much the trees do for human health and wellbeing.

To change the spaces and places and the environment of our cities, it is necessary to change the people attitude. It is a challenge that includes public decision-makers, technicians and professionals who design and transform the public spaces of our cities, besides all the citizens.

The action promotes a cultural change in order to educate citizens to aware of the importance of using nature based solutions in the city, which will increase the resilience and environmental sustainability. For this issue the citizens are the main challenge. This campaign targeting a wide audience would allow to intercept a large number of citizens who are certainly not those already involved trough the associations.

The idea of this action was born during direct in the 2nd and the 3rd stakeholders meeting in Ferrara. Ljubljana Green Capital provided inspiration for this action.

How to design a communication strategy on green cities and sustainable development?
The case study of Ljubljana Green Capital

Ljubljana Green Capital provided inspiration for this action. We are referring to the amazing campaign on the sustainable use of water aimed at empowering residents and visitors on the importance and urgency of responsible use of drinking water to protect the resource (forceful message).

Another interesting and inspiring aspect was the box information point (Point.For you.). It is in the heart of the city with green walls made of selected plant species (native plants) that naturally grow in the country to get information on their benefits, cultivation and use, to show the rich diversity of their country and to remind the inhabitants and visitors that we are closely connected with nature.

Good Practice of Perfect by Meeting PSC 2- Ljubljana 11th-13th September 2017

2. NATURE OF THE ACTION

The campaign targets the citizens and proposes to disseminate this message: "despite minor annoyance and need of maintenance, the trees provide indispensable services: for our well-being, our health, our safety, therefore we must commit, as administrations and citizens, to respect them and to increase their presence in the city ".

Operational actions:

- Selection of the main tree species occurring in the city and graphical representation through posters. For each selected species (about 10) is foreseen to explain with simple texts the main ES provided, in comparison with the main complaints expressed by citizens.
- Sponsorship research, in order to increase the visibility, not only local but also at national level, therefore promoting the Mantua Challenge Call for Action promoted by FAO, SISEF and World Forum on Urban Forests 2018.
- Research of scientific data on the selected trees species from different national sources (Qualiviva, SISEF, Ministry of Agricultural, Food and Forestry Policies, Benefits) and linkage with the data already available on the tree heritage from the Municipality of Ferrara and with those of the database in construction (Action 8).
- Communication campaign design.
- Evaluation of the technical and budget feasibility related to the issues of affixing.
- Development of the dissemination and communication campaign.

The reference for the development of the communication campaign will be the approaches of the Urban Center Ferrara and Rebus Emilia-Romagna case studies,

How to use social media to communicate nature based solutions to citizens?

The case study of REBUS, Emilia-Romagna Region

REBUS is a training laboratory and a method conceived by the Emilia-Romagna Region to redesign and rethink the city and public space through the nature based solutions for the mitigation and adaptation to climate change. In order to promote the visibility at national level besides the laboratory, a communication and dissemination campaign was promoted on social media targeting citizens, administrators and technicians.

The communication campaigns translated Facebook contents in memes planned for divulgation, in which technical content are simplified and humoristic, always associated to drawings, photos and diagrams. The images were conceived to approach the user in visual way and to favour viral interaction.

The posts on urban issues, related to the climate and nature based solutions, with the meme language were able to generate on the REBUS page many shares and a likes increase of 1000% (www.facebook. com / LabREBUS).

⋯⁘ Good Practice of Perfect by Handbook *Rethinking green infrastructure* by Municipality of Ferrara

How to increase citizens involvement in public green care through communication?

The case study of Urban Center Ferrara

The Urban Center of Ferrara Municipality is a public service to support citizens participation to the community and spaces improvement. Its aim is to create the conditions for local decision-making processes, in particular the urban and territorial policies, are more open to the communities inhabiting and living in Ferrara.

The Urban Center Team include a communication expert and a group of people expert in photography, videos and media with the commitment to spread the initiatives. All the participation meetings on commons and public green spaces managements are spread with dedicated communication campaign with the use of coordinated images and social media, furthermore, in order to increase the impact and strengthen the network, the events are documented with pictures and videos.

During the years of activity this visual and narrative dissemination methodology favoured the knowledge of the topics dealt by Urban Center, commons and public green spaces, and generated an emulation, awareness and involvement effect (www.facebook.com/UrbanCenterFerrara /).

Good Practice of Perfect by Handbook *Rethinking green infrastructure* by Municipality of Ferrara

3. STAKEHOLDERS INVOLVED

- ARPAE Emilia-Romagna (Regional Agency for Prevention, Environment and Energy of Emilia-Romagna): technical group that establishes the scientific contents for the communication campaign; tutoring action on climatic and environmental technical aspects
- "Centro Idea" of Ferrara Municipality and Urban Center Ferrara (Collaboration pact groups, Groups Cultivating public space): strategic role in the promotion of the campaign and in the involvement of local environmental and cultural associations
- local schools and citizens
- ANCI Emilia-Romagna (Regional Municipalities Association): strategic role in disseminating and raising awareness among the other municipalities of the contents of the campaign
- Green areas management Office of Ferrara Municipality: management of the database of the trees of the municipality of Ferrara and receiving citizens' complaints about their presence in the city
- Planning Office of Ferrara Municipality: design of the new improved database on green spaces
- Museum of natural history: active in evaluation and monitoring of biodiversity in the urban environment, it will support the activities for the definition of technical contents
- Culture Office of the Ferrara Municipality: involved in HICAPS-Interreg Central Europe project, one of their goals is an App on the ornamental and monumental trees in the historical park of the ancient Walls
- Office for affixing – ICA: responsible for authorizations for the use of billboards and technical aspects

4. TIMEFRAME AND COSTS

- Timeframe participatory process: January/September 2020: design, involvement of other partner projects and development of contents, prints. 2021 affixing
- Indicative costs: 15.000 euros including the costs of design, graphics and printing of about one hundred posters. With the executive planning of the campaign, the billposting costs will be better defined as well as communication costs through the media and organization costs of guided tours to some places where the posters will be exposed. The costs could be much lower if the design and graphics work were carried out within the municipal offices.
- Indicative funding sources: public and private, to be evaluated.

COMUNE DI FERRARA

Città Patrimonio dell'Umanità

ATTI DELLA GIUNTA COMUNALE

Seduta del giorno 26.11.2019

Deliberazione n. GC-2019-640

Prot. Gen. n. PG-2019-147158

Proposta di Delibera di Giunta n. PDLG-2019-713

Sono intervenuti i Signori:

Fabbri Alan	**Sindaco**
Coletti Cristina	**Assessore**
Travagli Angela	**Assessore**
Gulinelli Marco	**Assessore**
Kusiak Dorota	**Assessore**
Maggi Andrea	**Assessore**
Balboni Alessandro	**Assessore**
Fornasini Matteo	**Assessore**

Hanno giustificato l'assenza i Signori:

Lodi Nicola	**Vice Sindaco**
Guerrini Micol	**Assessore**

Assiste il Segretario Generale Dott.ssa Ornella Cavallari

Essendo gli intervenuti in numero legale il Presidente dichiara aperta la seduta

Oggetto

CUP B79D16012250007. Approvazione del Piano d'azione sulle infrastrutture verdi urbane redatto nell'ambito del "Progetto PERFECT", Obiettivo Cooperazione Territoriale Europea Programma Interreg Europe 2014 2020.

La presente deliberazione rimarrà in pubblicazione per 15 gg. consecutivi all'Albo Pretorio di questo Comune.
Firme autografe sostituite da indicazione a stampa ai sensi dell'art. 3, comma 2, D. Lgs n. 39/1993.

OGGETTO:
CUP B79D16012250007. Approvazione del Piano d'azione sulle infrastrutture verdi urbane redatto nell'ambito del "Progetto PERFECT", Obiettivo Cooperazione Territoriale Europea Programma Interreg Europe 2014 2020

LA GIUNTA COMUNALE

Premesso:

che con Delibera di Giunta Comunale GC-2016-733 del 28/12/2016 è stato approvato il Progetto "PERFECT" - Planning for Environment and Resource eFficiency in European Cities and Towns - Obiettivo Cooperazione Territoriale Europea - Programma Interreg Europe 2014-2020;

che in data 16/03/2017 è stato sottoscritto dal capofila e, in precedenza, da tutti i partner, il Partnership Agreement, che disciplina lo svolgimento del progetto e assicura la ripartizione del finanziamento europeo;

che l'obiettivo generale del progetto è dimostrare come la tutela, lo sviluppo e la valorizzazione del patrimonio naturale possano contribuire ad una crescita sostenibile, intelligente ed inclusiva attraverso lo scambio di buone prassi in materia di nuovi usi delle infrastrutture verdi migliorando quelli esistenti e potenziando le capacità e le conoscenze di decisori pubblici e amministratori, funzionari, esperti, tecnici per l'adozione di buone pratiche nei principali strumenti di policy;

che l'obiettivo del progetto è di redigere un piano di azione condiviso, mediante:

- individuazione e analisi delle buone prassi sull'utilizzo delle Infrastrutture verdi tra i partner;
- coinvolgimento delle autorità di gestione sui benefici socio-economici delle infrastrutture verdi al fine di influenzare i nuovi progetti e migliorare la governance degli strumenti di policy;
- aumento della capacità tecnica degli attori chiave nella realizzazione di nuovi interventi;
- sviluppo di piani d'azione per ogni partner al fine di influenzare gli strumenti di policy da ciascuno individuati (documenti di programmazione e/o piani urbanistici) per definire e/o includere gli investimenti strategici nelle infrastrutture verdi;

che l'obiettivo specifico del Piano d'azione del Comune di Ferrara individuato nell'Application form è il miglioramento delle politiche e delle strategie per la valorizzazione del 20% di spazio verde pubblico del centro urbano, attraverso la revisione dei contenuti e delle previsioni del Piano urbanistico generale comunale, già in fase di rielaborazione a seguito dell'entrata in vigore della legge regionale n. 24/2017 "Disciplina regionale sulla tutela e l'uso del suolo";

che il progetto è strutturato in due fasi. La prima fase, della durata di 3 anni, da gennaio 2017 a dicembre 2019, è dedicata all'identificazione delle buone pratiche replicabili a livello locale e alla costruzione di una rete di stakeholders locali, al fine di redigere il Piano d'azione. Ogni partner è affiancato da un gruppo di stakeholders locali, con cui condividere necessità territoriali, risultati delle attività svolte a livello transnazionale e avere supporto nel percorso di trasferimento delle buone pratiche e nello sviluppo del Piano di azione. La seconda fase, della durata di 2 anni, fino al dicembre 2021, è dedicata al monitoraggio dell'implementazione delle azioni previste;

che la consegna della versione definitiva del Piano di azione (in italiano e inglese) al Joint Secretariat del Programma Interreg Europe è prevista entro il 21 dicembre 2019, e per quella data è richiesta la validazione del Piano da parte dell'organo esecutivo dell'Ente, come assunzione di impegno a dar corso alla seconda fase del progetto di implementazione e monitoraggio;

che il suddetto Piano di azione costituisce atto di indirizzo verso l'Ufficio di Piano per la predisposizione del Piano urbanistico generale ai sensi della L.R. 24/2017;

Premesso inoltre:

che, con Determinazione dirigenziale DD-2018-915 PG. 2018-50647 esecutiva dal 26/04/2018, è stato stabilito di procedere alla selezione dell'affidatario del servizio di redazione di un manuale sulla progettazione di percorsi partecipativi e di una proposta di piano di azione locale sul tema delle infrastrutture verdi urbane, mediante criterio dell'offerta economicamente più vantaggiosa;

che l'Allegato tecnico (all. 2) all'Avviso di selezione pubblica individuava sei "Ambiti urbani rilevanti", individuati a priori dalle strutture tecniche dell'Ufficio di piano, sulle quali concentrare le attività di analisi e le proposte di azione, ovvero:

1. via Padova, asse di connessione tra i quartieri Barco e Pontelagoscuro e il fiume Po
2. il Parco delle Mura storiche nel quartiere Giardino
3. le aree agricole lungo via Gramicia e via Carli
4. cuneo verde a est della città: le aree fra Borgo Punta e via del Melo
5. il sistema degli spazi pubblici tra le mura di via Baluardi e via Volano, l'ippodromo e la Rivana
6. la fascia di margine lungo la ferrovia a sud di via Comacchio;

che, a seguito della procedura di selezione di cui sopra, è stato individuato quale vincitore il Raggruppamento temporaneo con capogruppo l'arch. Elena Farnè di Rimini e mandante l'Istituto Delta Ecologia Applicata S.r.l. di Ferrara, al quale è stato conferito l'incarico con Determinazione dirigenziale DD-2018-1405 PG. 2018-77179 del 20/06/2018;

che, in data 14/11/2018 è stata sottoscritta la "Convenzione per l'affidamento dell'incarico di redazione di un manuale sulla progettazione dei percorsi partecipativi e di una proposta di piano d'azione locale, sul tema delle infrastrutture verdi urbane, nell'ambito del progetto europeo Interreg Perfect", per un importo complessivo, a seguito di ribasso, pari a euro 24.200 (oltre a oneri e IVA), pari a un importo lordo di euro 30.291,62;

che, in data 17/05/2019 è stata sottoscritta una convenzione integrativa per l'aumento di prestazioni relativo all'inserimento di un settimo ambito urbano rilevante "L'area del Centro storico di Ferrara, tra viale Cavour e Porta Paola", portando l'importo lordo onnicomprensivo a euro 36.147,62;

Considerato:

che il Piano d'azione è stato redatto in costante collaborazione e sinergia con il Servizio Ufficio di piano e con il contributo dei principali stakeholders coinvolti nella prima fase di progetto. Si citano in particolare gli incontri con Regione Emilia-Romagna, ANCI, ARPAE - Educazione alla sostenibilità, Museo di Storia Naturale, Soprintendenza BAP, Consorzio di Bonifica e con numerose associazioni attive sul territorio;

che in data 15/11/2019, come da accordi, l'arch. Elena Farnè ha consegnato il Piano d'azione, comprensivo di un documento con le finalità del progetto, la metodologia adottata, l'abstract delle azioni e le schede descrittive di ciascuna azione, nonché della tavola di inquadramento delle aree studio, l'abaco delle infrastrutture verdi e sei mappe strategiche;

che il Piano di azione si compone di otto azioni. Le prime sei, specifiche per le sette aree studio (a seguito dall'accorpamento della strategia per le aree n. 3 e n. 4, spazialmente contigue), hanno una duplice finalità: la prima ha contenuto urbanistico e tecnico e mira a incidere sui contenuti della redigenda Strategia per la qualità urbana ed ecologico-ambientale del Piano urbanistico generale; la seconda attiene alla condivisione dei contenuti strategici con i portatori di interesse ritenuti caso per caso rilevanti;

che le restanti due azioni che completano il Piano hanno invece carattere generale e sono relative al completamento dell'analisi dei servizi ecosistemici forniti dal capitale naturale pubblico (e relativa costruzione di una banca dati GIS) e alla comunicazione verso la cittadinanza dei benefici apportati dal verde urbano alla qualità della vita;

Precisato:

che il quadro economico complessivo del Progetto "PERFECT" prevede un finanziamento al 100%: l' 85% è coperto da fondi comunitari (FESR) e nel caso di partner italiani il restante 15% è a carico del Fondo di Rotazione, come da Delibera CIPE n. 10 del 28 gennaio 2015;

che per il Comune di Ferrara l'importo totale di progetto pari ad € 261.063,40 avrà completa copertura finanziaria con tali fondi, così come meglio specificato:

PROGETTO PERFECT		
ENTRATA		USCITA
FESR (ERDF) da Town and Country Planning Association - UK	Entrata Stato da Fondo di Rotazione ex lege 183/1987	
85,00%	15,00%	
€ 221,903.55	€ 39,159.45	€ 261.063,00

Visto il parere favorevole in ordine alla regolarità tecnica del Dirigente del Servizio Ufficio di Piano proponente (art. 49 – 1 c. del D. Lgs . 267/2000);

Dato atto che il presente provvedimento non ha rilevanza contabile;

Con il voto favorevole di tutti i presenti

DELIBERA

di approvare il Piano di azione sulle infrastrutture verdi urbane redatto nell'ambito del Progetto PERFECT, Obiettivo Cooperazione Territoriale Europea Programma Interreg Europe 2014 2020, allegato alla presente delibera e comprensivo di un documento con le finalità del progetto, la metodologia adottata, l'abstract delle azioni e le schede descrittive di ciascuna azione, nonché della tavola di inquadramento delle aree studio, l'abaco delle infrastrutture verdi e sei mappe strategiche;

di dare avvio alla seconda fase del progetto Perfect, della durata biennale (da gennaio 2020 a dicembre 2021) dedicata al monitoraggio dell'implementazione delle azioni inserite nel Piano d'azione;

di dare atto che la responsabile del procedimento è l'arch. Silvia Mazzanti, funzionario tecnico presso il Servizio Ufficio di piano.

Il Sindaco
Alan Fabbri

Il Segretario Generale
Ornella Cavallari