

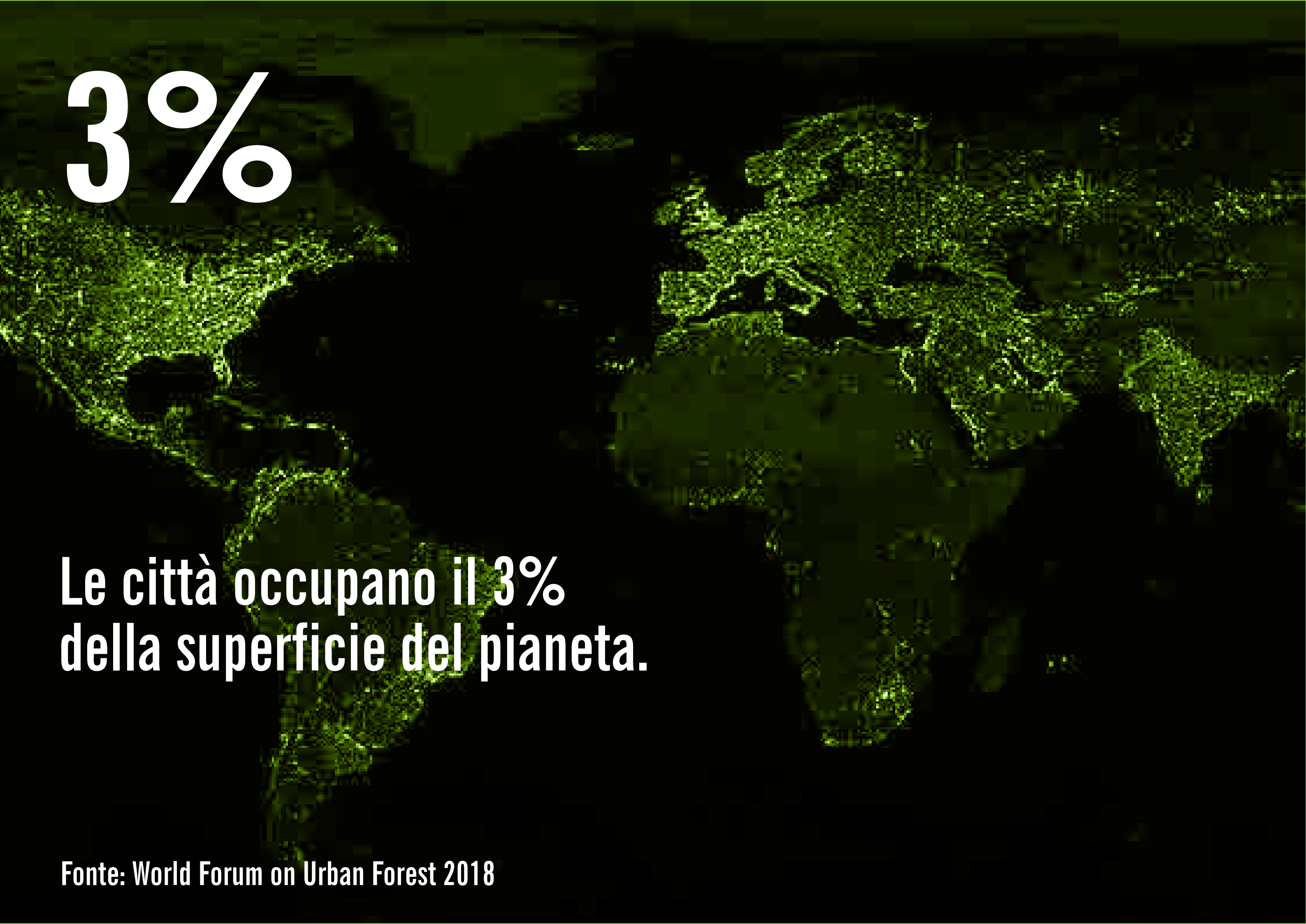
ESPERIENZE EUROPEE A SALDO POSITIVO DI SUOLO

Luisa Ravanello, Regione Emilia-Romagna
Elena Farnè, architetto





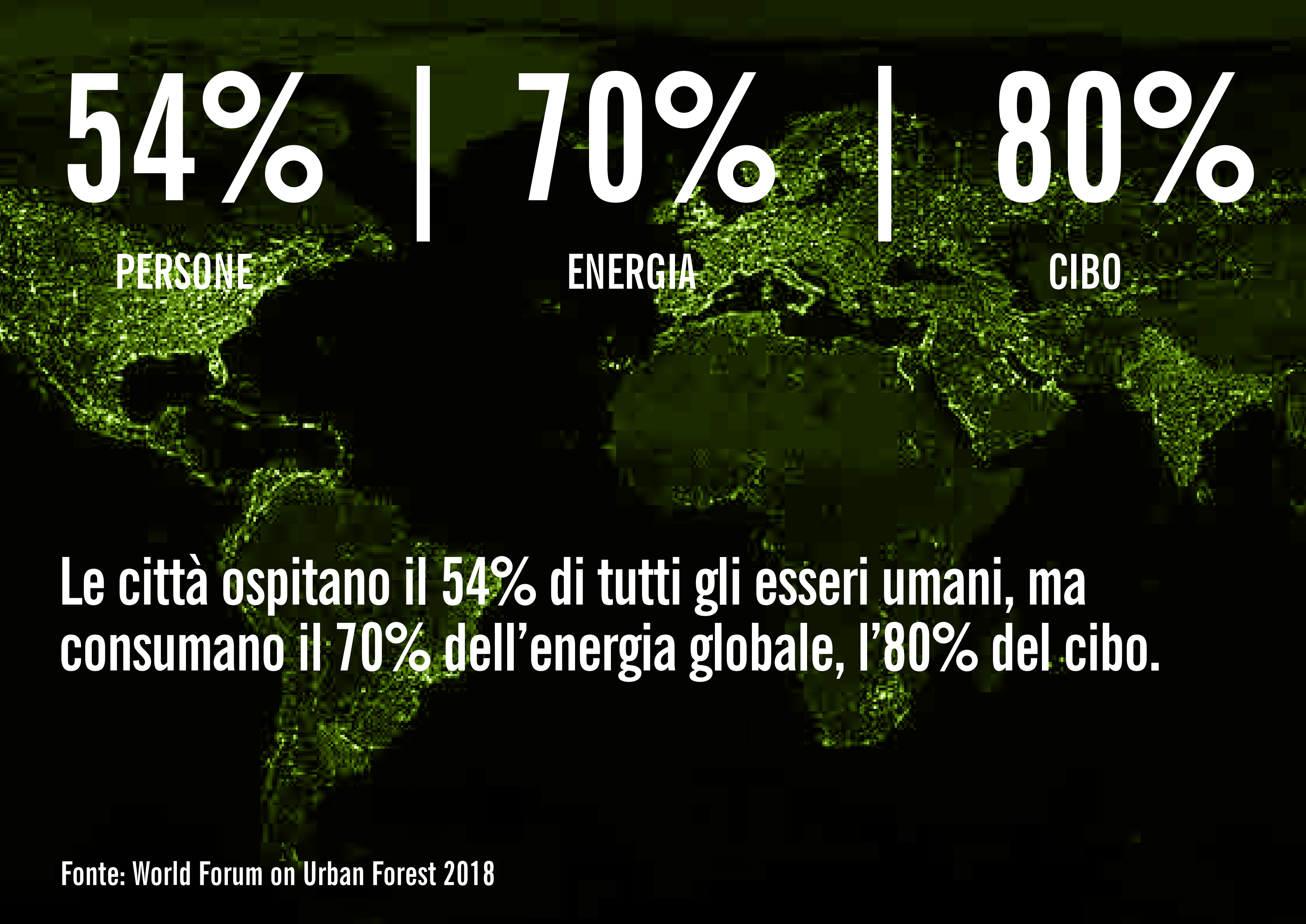
LE CITTÀ

A world map with a dark blue background. The landmasses are outlined in a lighter blue. Urban areas are highlighted in a vibrant red color, showing a dense network of cities and metropolitan areas across all continents. The text '3%' is prominently displayed in the top left corner.

3%

**Le città occupano il 3%
della superficie del pianeta.**

Fonte: World Forum on Urban Forest 2018



54%

PERSONE

70%

ENERGIA

80%

CIBO

Le città ospitano il 54% di tutti gli esseri umani, ma consumano il 70% dell'energia globale, l'80% del cibo.

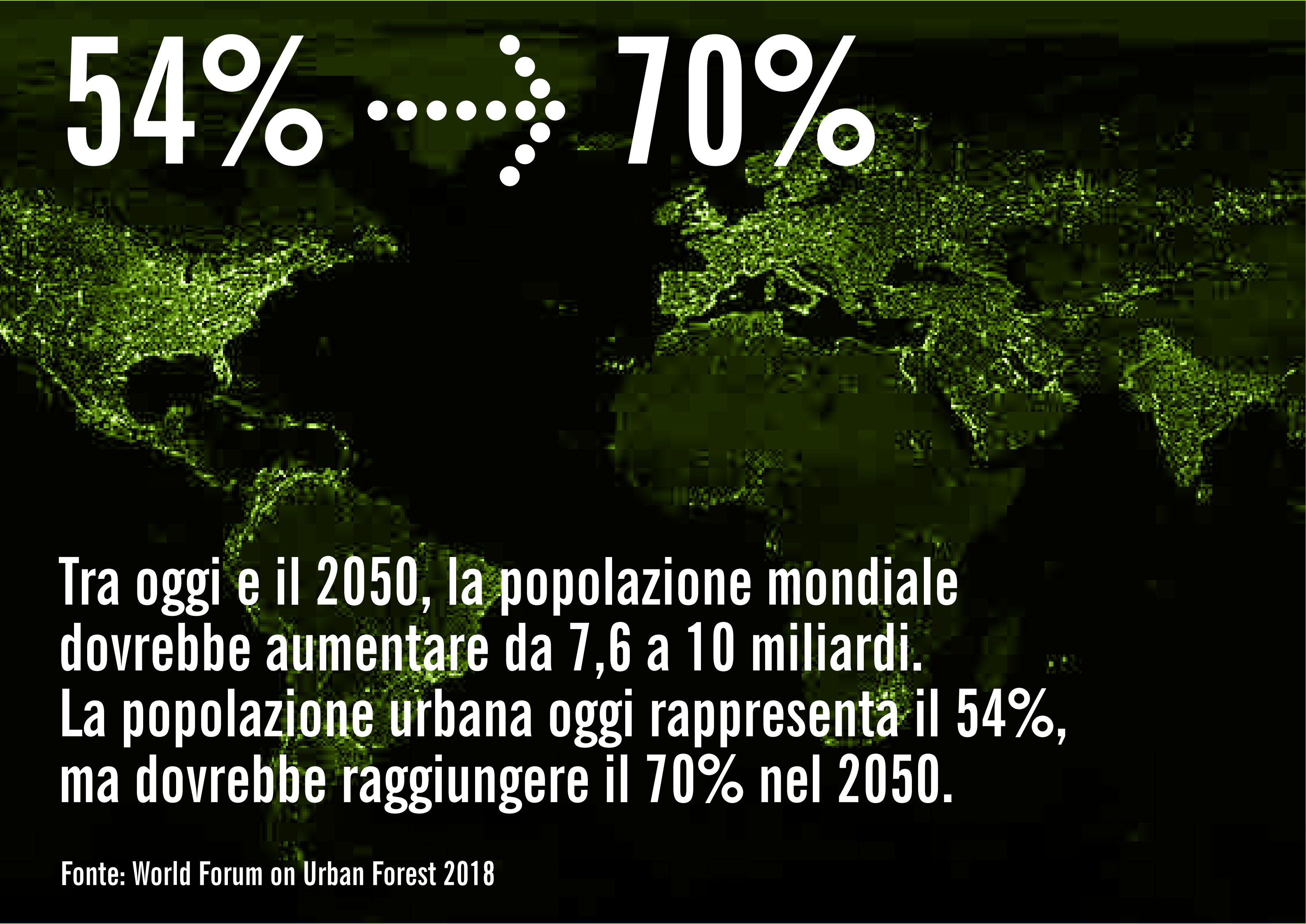


75%

GAS SERRA

**Le città emettono il 75% di inquinanti
e gas serra.**

Fonte: World Forum on Urban Forest 2018




54% 70%

**Tra oggi e il 2050, la popolazione mondiale dovrebbe aumentare da 7,6 a 10 miliardi.
La popolazione urbana oggi rappresenta il 54%,
ma dovrebbe raggiungere il 70% nel 2050.**

Fonte: World Forum on Urban Forest 2018



il verde urbano

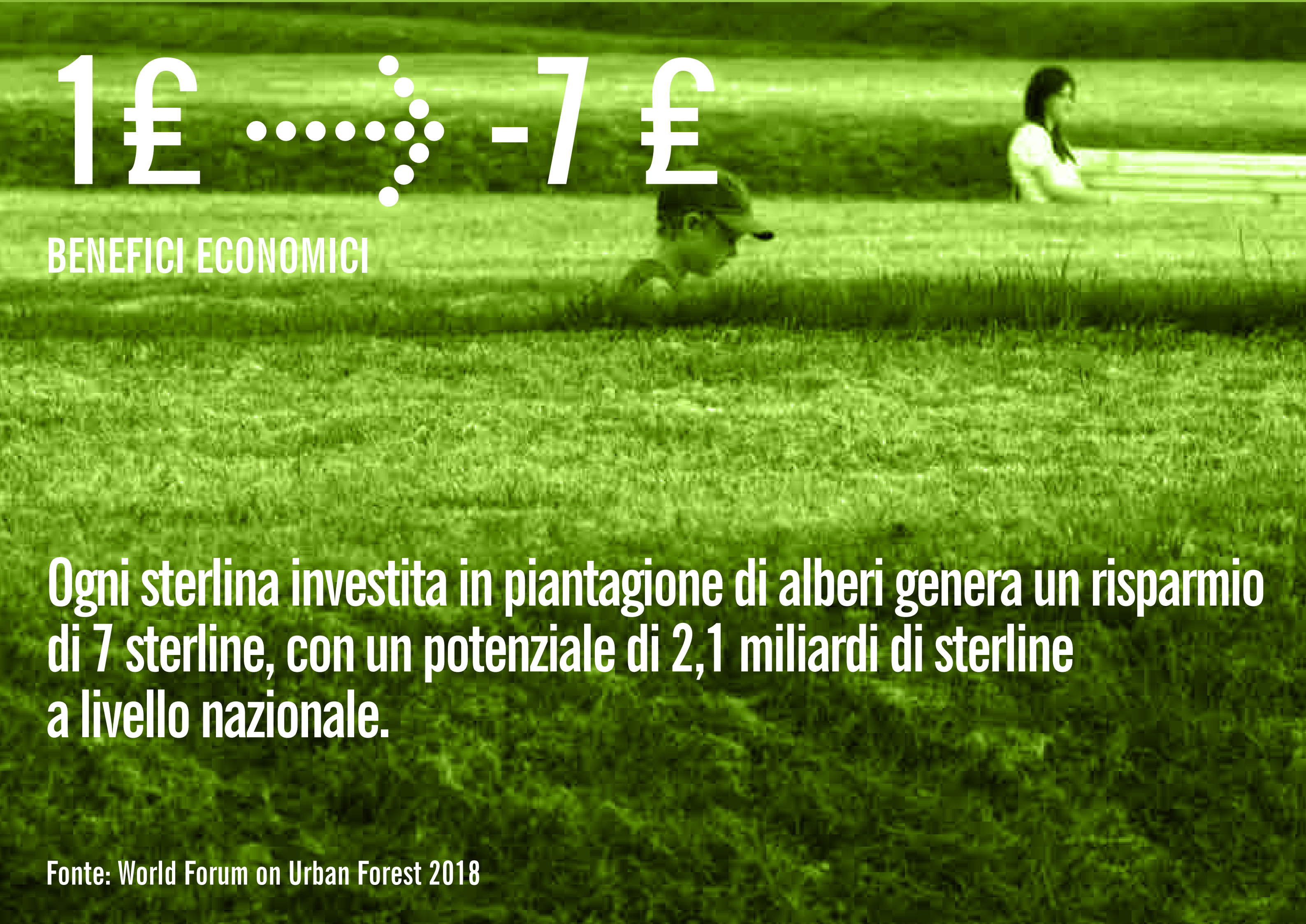


1\$ + 3\$

BENEFICI ECONOMICI

**Per ogni dollaro speso per gli alberi,
vi è un ritorno di 2,70 dollari in benefici comunitari.**

Fonte: World Forum on Urban Forest 2018



1€ -7€

BENEFICI ECONOMICI

Ogni sterlina investita in piantagione di alberi genera un risparmio di 7 sterline, con un potenziale di 2,1 miliardi di sterline a livello nazionale.

Fonte: World Forum on Urban Forest 2018

1...4

ALBERO

PERSONE

Un grande albero può produrre abbastanza ossigeno
per almeno quattro persone.

Fonte: World Forum on Urban Forest 2018




+15-20%

VALORE ECONOMICO DI CONTESTO

Un contesto urbano circondato dal verde,
può produrre un aumento medio del 15-20% del valore
della proprietà.

Fonte: World Forum on Urban Forest 2018



-50% condizionamento
-20-50% riscaldamento

RISPARMI ECONOMICI ED ENERGETICI

Alberi correttamente posizionati attorno agli edifici possono ridurre la necessità di condizionamento dell'aria fino al 50% e risparmiare dal 20% al 50% sulla bolletta del riscaldamento.

Fonte: World Forum on Urban Forest 2018

ATTIVITÀ LINEE GUIDA

- ...❖ **1 / ANALISI DI CASI STUDIO DI DESEALING SELEZIONATI IN AMBITO NAZIONALE E INTERNAZIONALE**
- ...❖ **2 / ANALISI DI REGOLAMENTI E NORMATIVE ATTINENTI LA GESTIONE SOSTENIBILE DELLE ACQUE, LA GESTIONE DEL VERDE PUBBLICO E DEI RIFIUTI CONNESSI A OPERE DI DESEALING URBANO**
- ...❖ **3 / REDAZIONE LINEE GUIDA PER OPERE DI DESEALING CONNESSE A PROGETTI/PROCESSI DI RIGENERAZIONE URBANA**

TIPOLOGIE CASI STUDIO

- **A / GRANDI AREE DISMESSE DI TRASFORMAZIONE ED ECO-QUARTIERI**
- **B / GRANDI AREE DISMESSE DI TRASFORMAZIONE E PARCHI URBANI**
- **C / PIAZZE URBANE, SPAZI E GIARDINI PUBBLICI**
- **D / PICCOLI GIARDINI E USI TEMPORANEI**
- **E / PRATICHE DAL BASSO**
- **F / STRUMENTI URBANISTICI E PIANI PARTICOLAREGGIATI**

ALCUNI ESEMPI

- **A8. CLICHY BATIGNOLLES** PARIGI | FRANCIA
- **B14. FLUGPLATZ** FRANCOFORTE | GERMANIA
- **C22. JARDINES DES AMARANTES** LIONE | FRANCIA
- **D30. JARDIN JOYEUX** AUBERVILLIERS | FRANCIA
- **D32. TEXTURE PARKING** COURTRAI | BELGIO
- **E34. DEPAVE + DEPAVEPARADISE** | USA + CANADA

CASI STUDIO

● DEPAVE + DEPAVE PARADISE

CLICHY-BATIGNOLLES
JARDINES DES AMARANTES
TEXTURE PARKING
JARDIN JOYEUX
FLUGPLATZ

**DA EX SCALO FERROVIARIO A ECO-QUARTIERE RESILIENTE E PARCO URBANO
PER L'ADATTAMENTO AL CAMBIAMENTO CLIMATICO**

DESEALING: SUPERFICI PERMEABILI PRIMA: 0,5 ETTARI | DOPO: 12 ETTARI

**INFRASTRUTTURA VERDE E BLU: PARCO CUORE DELL'INTERVENTO DI RIGENERAZIONE
SI SVILUPPA INTORNO AD UN FOSSATO UMIDO E AD UN LAGHETTO (BIOTOPO)**

**IN CUI CONFLUISCONO LE ACQUE PIOVANE. IL COLLETTAMENTO AL SISTEMA FOGNARIO
AVVIENE SOLO IN CASI ECCEZIONALI. I SUOLI SONO MODELLATI ATTRAVERSO CANALI**

INTERVENTI In corso-2007
DIMENSIONI 50 Ettari

CLICHY-BATIGNOLLES^{PARIGI}

5/2001



2006

Image © 2018 DigitalGlobe

12/2011



2012



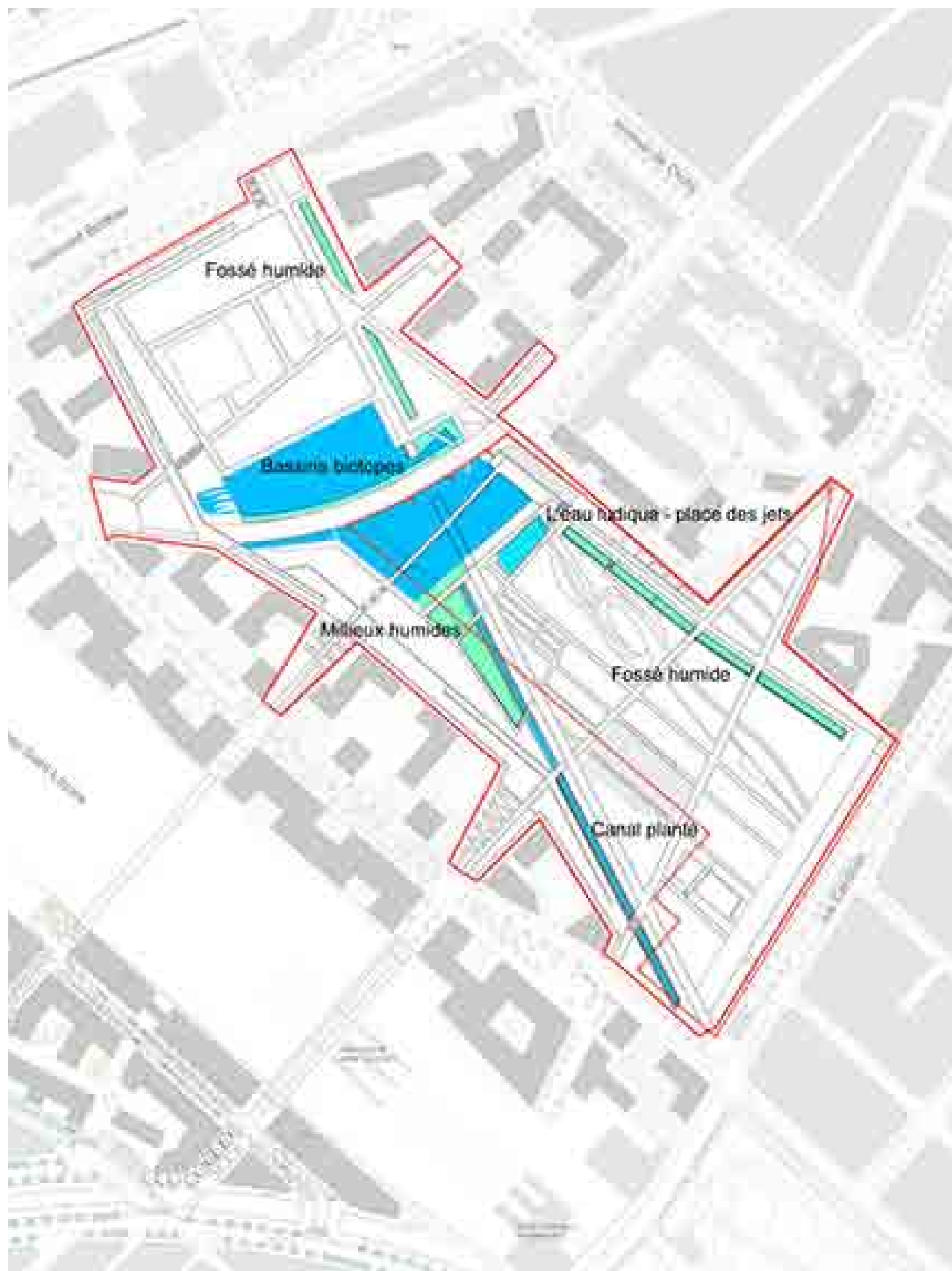
2017



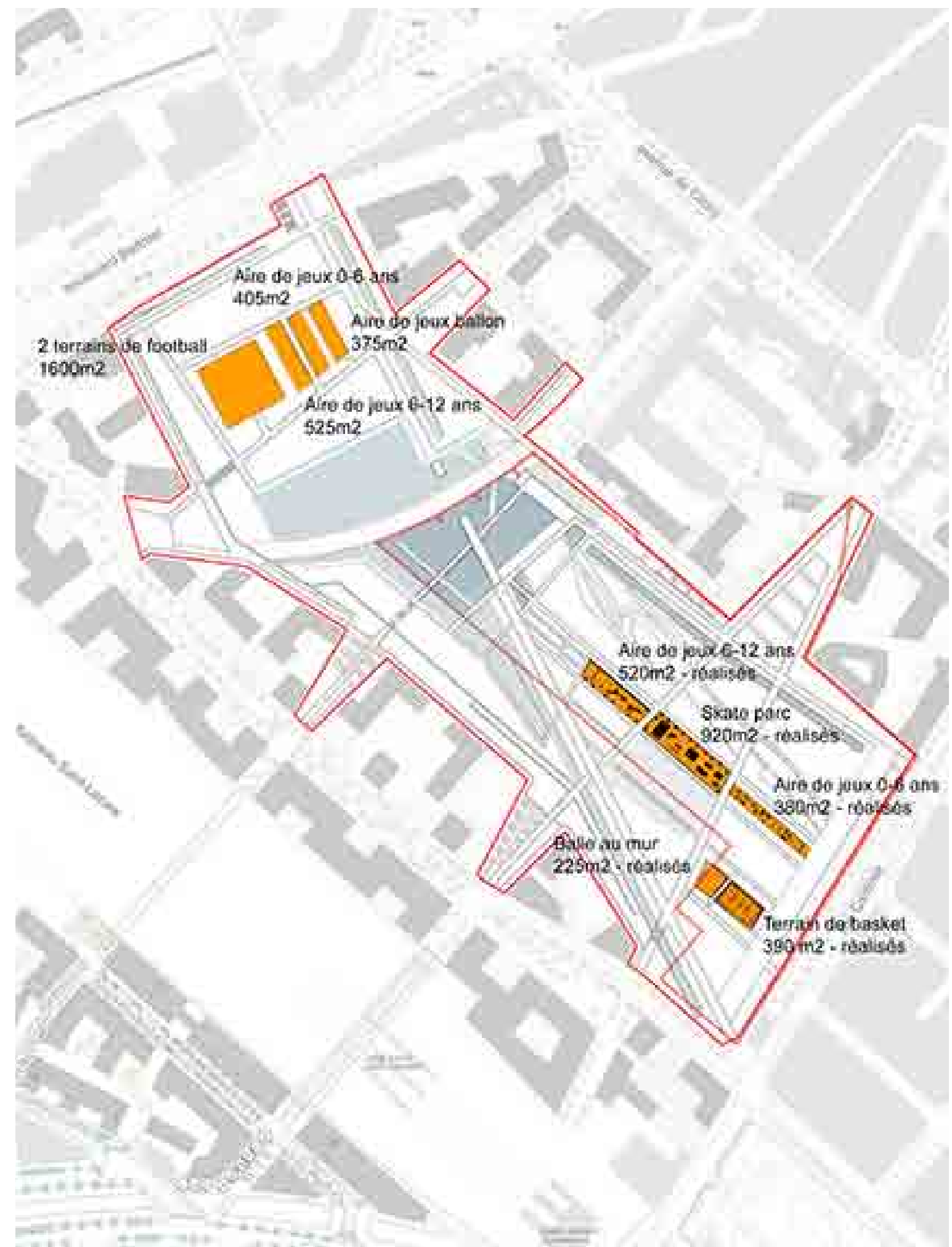
SETTORI-PROPRIETÀ D'INTERVENTO / Fonte www.clichy-batignolles.fr/



MOBILITÀ / Fonte www.clichy-batignolles.fr/



REGIMAZIONE ACQUA / Fonte www.osty.fr/



ATTREZZATURE PER IL TEMPO LIBERO / Fonte www.osty.fr/

INTERVENTI 2007



INTERVENTI 2014



INTERVENTI 2020



INTERVENTO REALIZZATO











DA EX ELIPORTO A PARCO URBANO ECOLOGICO ATTREZZATO

DESEALING: SUPERFICI PERMEABILI PRIMA: 4 ETTARI | DOPO: 7 ETTARI

INFRASTRUTTURA VERDE E BLU: 1/3 DELL'AREA È STATA DEPAVIMENTATA

E SONO STATE INTRODOTTE NUMEROSE SUPERFICI PERMEABILI E INONDABILI

L'EVOLUZIONE NEL TEMPO DI SUOLI E VEGETAZIONE SONO UN ELEMENTO DI PROGETTO

RIDUZIONE DEI MATERIALI DI SMALTIMENTO IN PARTE LASCIATI NEL LUOGO

INTERVENTI 2002-2004

DIMENSIONI 15 Ettari

FLUGPLATZ FRANCOFORTE



00

2002

Image © 2018 GeoContent

9/8/2004



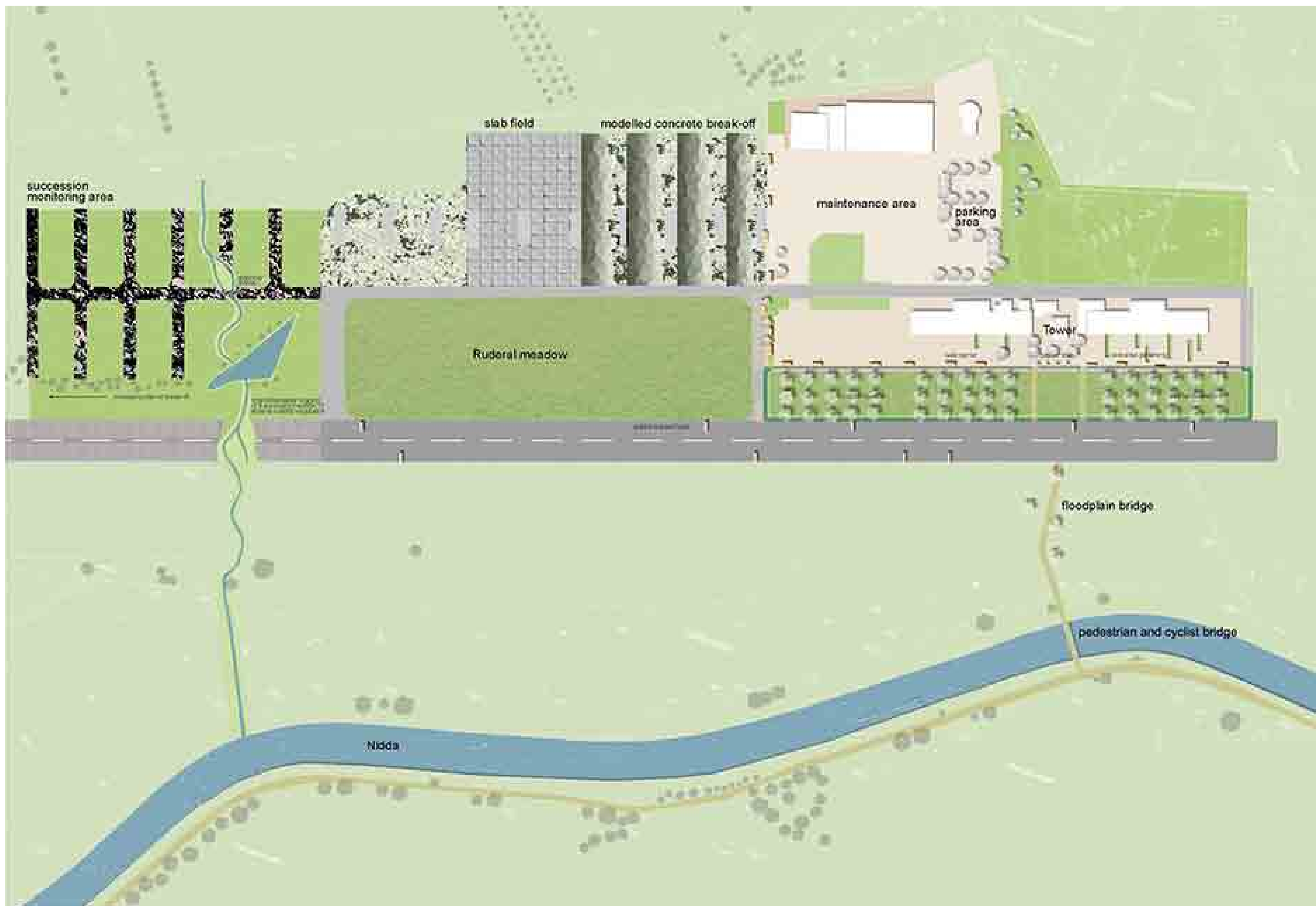
2005

Image © 2018 AeroWes
Image © 2018 DigitalGlobe

4/7/2018



2017



PLANIMETRIA D'INTERVENTO / Fonte GTL Gnuchtel Triebswetter Landschaft Architekten















DA PARCHEGGIO A GIARDINO D'ARTE, A GIARDINO COMUNITARIO

PROCESSI DI RIGENERAZIONE URBANA E DI EDILIZIA PUBBLICA

DESEALING: SUPERFICI PERMEABILI PRIMA: 0 MQ | DOPO: 2500 MQ

INFRASTRUTTURA VERDE E BLU: LE SUPERFICI PERMEABILI (GIARDINO COMUNITARIO, PRATI, BOSCHETTO) E SEMIPERMEABILI DELLA PIAZZETTA E DEI PERCORSI RIDUCONO IL RUN-OFF DELLE ACQUE PLUVIALI E FAVORISCONO L'INFILTRAZIONE.

L'ORTO GIARDINO E LE ROBINIE SONO UN FATTORE DI MIGLIORAMENTO CLIMATICO.

INTERVENTI 2000-2015

DIMENSIONI 5600 MQ

JARDIN DES AMARANTES LIONE



2000



2013



2017













Fonte L. Ravanello







Fonte L. Ravanello

DA PARCHEGGIO A GIARDINO ROCCIOSO IN EVOLUZIONE

GIARDINO TEMPORANEO, IN ATTESA DI UN NUOVO PROGETTO URBANO

DESEALING: SUPERFICI PERMEABILI PRIMA: 0 MQ | DOPO: 1000 MQ

INFRASTRUTTURA VERDE E BLU: VEGETAZIONE PIONIERA

RIDUZIONE DEL RUN-OFF E DELLE TEMPERATURE SUPERFICIALI DELL'AREA

INTERVENTI 2015 5 giorni di cantiere

DIMENSIONI 1000 mq

JARDIN JOYEUX AUBERVILLIERS



2008

5/18/2018

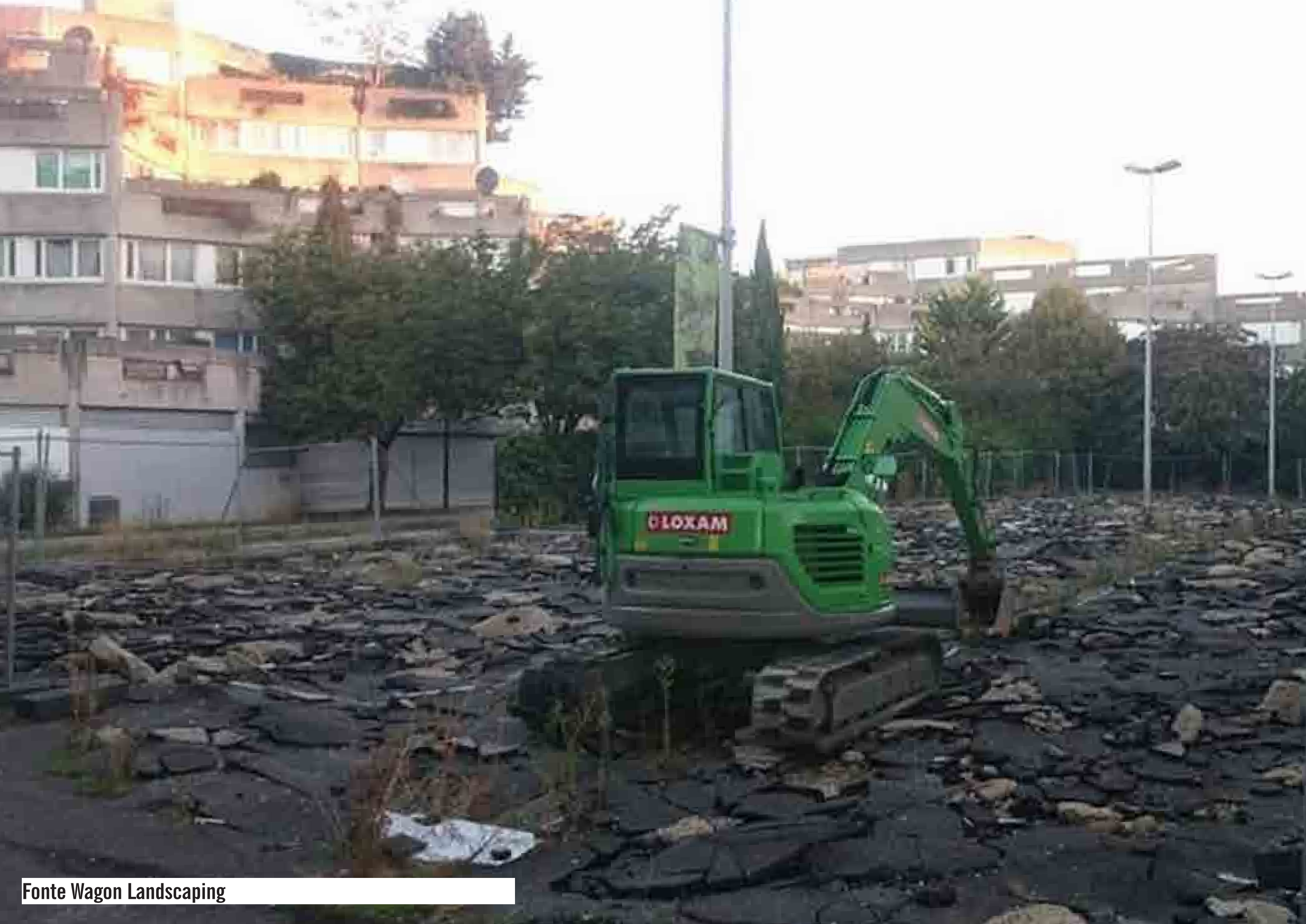
2017





BOUTIQUE
LANSIER
BERN

AUBERCAIL LUBERCAIL



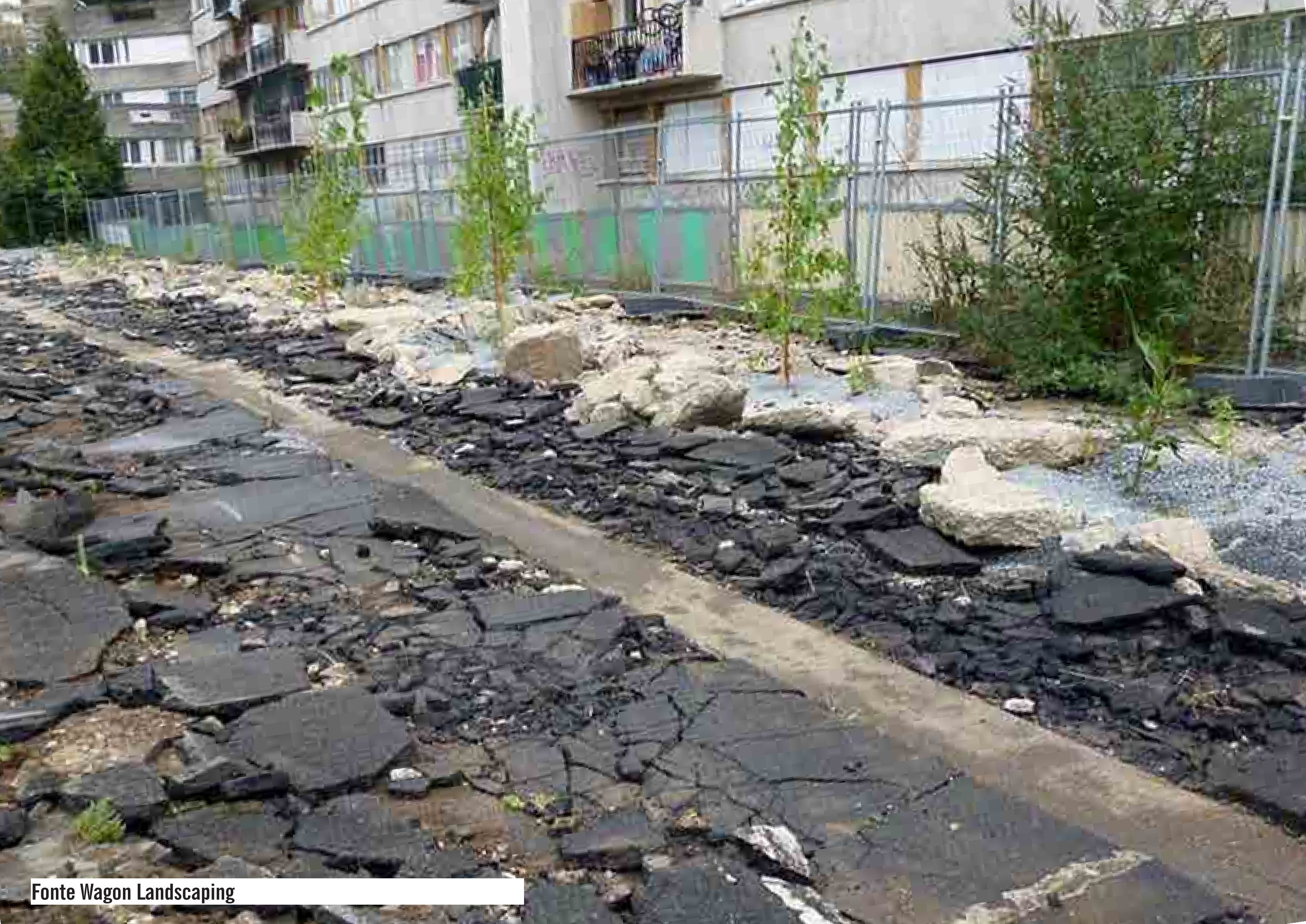














**DA PARCHEGGIO A GIARDINO TEMPORANEO
IN ATTESA DI UN NUOVO PROGETTO URBANO**

DESEALING: SUPERFICI PERMEABILI PRIMA: 0 MQ | DOPO: 750 MQ

INFRASTRUTTURA VERDE E BLU: VEGETAZIONE RUSTICA

RIDUZIONE DEL RUN-OFF E DELLE TEMPERATURE SUPERFICIALI DELL'AREA

INTERVENTI 2014 5 mesi tra progetto e realizzazione

DIMENSIONI 1250 mq

TEXTURE PARKING COURTRAI



2012

Image © 2018 Aerodata International Surveys

3/26/2018



2017

























Fonte Wagon Landscaping

NATURA IN CITTÀ E AZIONI DAL BASSO PER LA CURA DELLO SPAZIO PUBBLICO

DESEALING: SUPERFICI PERMEABILI PRIMA: 0 MQ | DOPO: 16,5 ETTARI

INFRASTRUTTURA VERDE E BLU: RAIN GARDEN E SPAZI VERDI COMUNITARI

RIDUZIONE DEL RUN-OFF E DELLE TEMPERATURE SUPERFICIALI

INTERVENTI 2008- in corso

DIMENSIONI 165.000 mq (16,5 ettari)

13.000 volontari | 93 nuovi giardini

DEPAVE IS PARADISE! USA E CANADA

We depave for...



HOW TO depave



The Guide to Freeing Your Soil



PLANNING

You have a site, and have decided you want to depave it. Before you begin tearing things apart, it is important to have a plan for what you want to put in its place.

One of the factors to consider is how water interacts with the site. Walk around your site to do some critical observation and ask yourself a few questions. Closely examine your site and evaluate drainage in and on the perimeter of the potential depave site. How will drainage be handled onto or across the newly-depaved site? Are there downspouts from adjacent buildings? Do the downspouts go into underground pipes? Or do they drain to the pavement? If the latter, where will this water go or concentrate after the depaving. Consider opportunities to disconnect downspouts from sewer lines and utilize the newly-depaved area for on-site infiltration using bio-swales or other low-tech approaches.

Contact your local city or county for guidance on stormwater retrofit information and design. How will removing this section of pavement affect the adjacent sections? Are there drains currently on site, what are they connected to? After you have explored managing the water that will fall on the site, then you'll think about what you will use the site for once the pavement is removed. It will be helpful to create a site plan to record your ideas.

For a first time depaving project, we highly recommend starting small, 500 square feet or less. Once the site has been selected, discuss depaving with the property owner and get written approval for the project. Next, research the history of your site and test your soil. Then, create a vision for the future greenspace and depict it in a site plan.

Check out [Appendix C](#) for the full Depaving Checklist



PLANNING

You have a site, and have decided you want to depave it. Before you begin tearing things apart, it is important to have a plan for what you want to put in its place.

One of the factors to consider is how water interacts with the site. Walk around your site to do some critical observation and ask yourself a few questions. Closely examine your site and evaluate drainage in and on the perimeter of the potential depave site. How will drainage be handled onto or across the newly-depaved site? Are there downspouts from adjacent buildings? Do the downspouts go into underground pipes? Or do they drain to the pavement? If the latter, where will this water go or concentrate after the depaving. Consider opportunities to disconnect downspouts from sewer lines and utilize the newly-depaved area for on-site infiltration using bio-swales or other low-tech approaches.

Contact your local city or county for guidance on stormwater retrofit information and design. How will removing this section of pavement affect the adjacent sections? Are there drains currently on site, what are they connected to? After you have explored managing the water that will fall on the site, then you'll think about what you will use the site for once the pavement is removed. It will be helpful to create a site plan to record your ideas.

For a first time depaving project, we highly recommend starting small, 500 square feet or less. Once the site has been selected, discuss depaving with the property owner and get written approval for the project. Next, research the history of your site and test your soil. Then, create a vision for the future greenspace and depict it in a site plan.

Check out [Appendix C](#) for the full Depaving Checklist



SITE HISTORY & SOIL HEALTH

Soil condition may influence your post-depaving plans, so it is important to take the time to research this prior to depaving. Knowing the history of your site can help determine the condition of the soil underneath the pavement. A good place to start is at your local library or assessor's office with Sanborn Maps. Land deeds are also helpful to acquire information about previous landowners and land uses. For Portland residents, Portland Maps Online - through the City of Portland - is a useful resource.

Lead is the most commonly found dangerous contaminant in urban soils. The number one source of lead contamination is lead paint, from older construction and older houses. Scraping and sanding paint, or chipping and flaking of paint, is the source of soil contamination in the home environment.

TESTING SOIL

Depave discourages community members from removing pavement that is covering contaminated soil. If contamination is currently present in the soil, the contamination is capped and is not causing any severe negative environmental or health impacts. Unless there is a cleanup plan in place, removing the pavement may do more harm than good. Therefore, Depave strongly recommends testing the soil under the pavement before any pavement is removed.



What to test for?

If the post-depave plan does not include growing food, Depave recommends testing for: Lead, Cadmium, Hydrocarbons, and Arsenic. If the post-depave plan includes growing food, Depave recommends also testing for organochlorine pesticides.

Refer to Appendix A for our soil testing procedure and how to understand the results of your soil test.

SOIL INFILTRATION TEST

An infiltration test will help determine if the soil on the property is suitable for certain types of stormwater management systems, such as a rain garden or dry well. This test measures how quickly water can soak in and flow through the soil. With a few simple materials, this test can be easily performed.

Refer to Appendix B for detailed step-by-step instructions on how to perform an infiltration test.

CREATING A PLAN



A site plan is a detailed drawing of the site including what changes are being proposed. A detailed site plan is required in order to get a permit from the City. If a permit is not required for the project, the plan will still be very helpful in helping determine what materials will be needed to complete the project, the budget, and how it will look when the project is complete.

Your site plan should clearly depict: where you propose to depave, a scale, a north arrow, elevation points and water flow across the site, stormwater drains, important project notes, as well as existing and proposed structures and trees. These drawings do not need to be polished documents, but do need to be drawn to scale and thoroughly detail the elements of your proposal. When working within a community there is often a design professional who can help create a plan. For this reason, and many others, we highly recommend reaching out to the community to collaboratively create a vision — depicted in your site plan — for the future greenspace.

Other drawings, such as sections through the area and a planting plan/list can also help you define your project. Creating a **plant list** based on the site plan will help determine how many plants are needed, and guide your budget and your landscaping efforts. A plant list should at least contain the common and botanical name, quantities, and the size (of the container) you plan to purchase.

CITY PERMITS FOR YOUR PROJECT

Each city has different rules and regulations regarding permit requirements. The permitting process can be simple or more complicated, depending on the elements of your plan.

Projects that involve excavating large areas or treating stormwater on site, with a rain garden, may take longer to permit than projects that simply involve replacing pavement with garden space.

If the pavement you want to remove is in the public right-of-way, you may need permission from your city's transportation department. If the land you want to depave is currently considered to be a parking lot, you may also need to get permission from the city. A certain amount of off-street parking is required for many commercial and residential properties. Inquire with your city's development agency to clarify if your proposed project requires a permit.

PERMITTING IN PORTLAND

For projects completed on private property, a permit may not be required if the area being affected is fairly small.

Larger projects often require these documents for permitting:

- a site plan, a section, and a plant list
- a site development permit
- an erosion control agreement
- proof of an infiltration test (for stormwater elements)
- a stormwater facility maintenance agreement

Call or visit the Bureau of Development Services to determine if you need a permit. **Be prepared** with your site plan in order to clearly convey the ideas of your proposal.

Find more on permitting in Portland: depave.org/resources

SURFACE MATERIAL

SURFACE TYPE

Before you get started, the impervious surface needs to be broken down into smaller pieces that can be physically lifted. This can be done either using a diamond-blade saw or a jackhammer. A few questions need to be answered in order to determine which one is right for the project:

- What is the surface material?
- How big is the area to be removed?
- Does the depaving border an area that needs be preserved?

CONCRETE - REUSE IT!

Concrete is harder and more durable than asphalt, so depaving large areas of concrete (larger than a driveway or patio) by hand will be too difficult. This “urbanite” can be reused to construct walkways, flower beds, fire pits, retaining walls and other outdoor structures. If you or your neighbors can’t use your leftovers, you can post it online and will likely find a taker. Reduce, Reuse, Recycle!

ASPHALT - RECYCLE IT!

Asphalt is softer and lighter than concrete and is not suitable for reuse as a long-lived building material. Depaving vast areas of asphalt can easily be accomplished by hand. It is readily recycled by local pavement processing companies into a crushed rock aggregate used in construction projects. In order to ensure the asphalt gets recycled, it is best to keep materials separate; one dumpster for asphalt, and one for gravel and other debris.



CALL BEFORE YOU DIG

The national ‘call before you dig’ number is 811. This free service alerts the utility companies to come out and mark your property showing where the water, electric, gas, and any cable lines are buried. Within two business days someone will be sent to tag the street and property. Red is for electricity, cables, conduit, yellow means gas, oil, or petroleum, orange signifies communication, alarm or signal lines, blue and purple indicate water lines and green shows sewers and drain lines. A yellow line across your proposed work site can be dangerous so be careful!!! Gas leaks are no fun.

BEFORE DEPAVING

PREPARING ASPHALT WITH A SAW

A diamond-blade walk-behind saw is used to create a straight perimeter bordering an area of pavement that is going to be preserved, or for large areas that will be removed by hand. **Cutting asphalt up into a grid is the best way to prepare large surfaces for hand removal with pry bars.** These saws work well for cutting straight lines, and are also great for cutting tree wells or any work done in the public right-of-way in which some of the pavement remains and a neat clean line between the two areas is desired.

The saw and diamond blade can be rented from a local equipment rental store. An open bed truck is needed to transport the saw to and from the site. A hose and outdoor water spigot will be needed to cool the blade while running the saw.



BREAKING UP CONCRETE WITH A JACKHAMMER

A saw and a prybar just won't cut it with concrete; you'll need a jackhammer!

This tool is inexpensive to rent and simple to use. The chisel and point bits are best for concrete. When using the jackhammer, positioning is key. Your job is to keep it from falling over, and angling it when it needs to be angled. First create cracks with the point bit, and then "explore" the cracks using the chisel bit to make them bigger. This is all easier if the concrete has room to move (i.e. break), so work from the edges toward the center. If you encounter rebar, it might be best to call in a professional to remove it, as steel-reinforced concrete is much stronger.

ORDER A DROP BOX

Contact a local garbage hauler to get a 10-yard drop box delivered to your project site before you start depaving. Make sure the box is as close as possible without being in the way and that the doors are facing toward the removal area (marked out with paint).

A standard 10-yard drop box can accommodate about 400-500 square feet of asphalt.

HAND TOOLS

PRY BAR

A pry bar is a long steel bar that works extremely well for prying up pieces of asphalt and concrete. **The pry bar is the best depaving tool! Use it in conjunction with a smaller piece of asphalt placed underneath the bar next to a crack — like a seesaw — to leverage pieces out of the ground and reduce the strength needed to pry up pavement.** Pry bars can be purchased at most hardware stores.

PICK AXE

Pickaxes can be useful to pry up the chunks of concrete or asphalt. They usually have one sharp pointed end and one flat end. Use extreme caution when swinging these and always make sure no one is standing behind you.

SLEDGEHAMMER

Sledgehammers can be used to help break up big pieces of asphalt. If the saw blade didn't quite cut all the way through the asphalt, a sledgehammer will really help to make that last crack. As with the pickaxe, use extreme caution when using a sledgehammer and always double check to make sure there is no one behind you.

SAFETY

Gloves and closed toed shoes are a must when depaving. Eye & ear protection, a dust mask, and long pants are highly recommended.



WHEELBARROW

Construction-grade wheelbarrows are used to transport the broken up asphalt or concrete to the drop box. When working on a large area, it is best to work from back to front in order to make sure the wheel barrow has a clear hard surface to roll on. Don't forget a ramp, so you can get your wheelbarrow into the drop box — a long 2 x 10 or something even larger will be really helpful.

HAND TRUCK

Hand trucks can be used to transport overly heavy blocks of material. Using a wide metal or wood ramp, the hand truck can be wheeled directly into the dropbox for easy unloading of asphalt blocks.

DEPAVING

TECHNIQUE

Now is the time to get the material off the ground and into a drop box to be hauled away or into a pile to be reused.

If the area was cut into squares using a saw, it is best to start with either a pickaxe or a pry bar. It is helpful when cutting the asphalt if you cut and remove several small triangles at the corners of a few squares to give yourself easy places to start prying. Starting at a corner of one of the squares, use a prybar to pick away at a corner until the tool can get slightly under the slab. Once one end of the bar is under the surface, push the other end all the way down until the square starts to come up. Have a friend stick another bar in under the same square and do the same. Both bars working together should be enough to get the heavy chunk off the ground.

Once the asphalt square is separated from the others, at least two people will be needed to lift the block into a wheelbarrow. Wheeling a wheelbarrow full of asphalt can be very heavy and it can easily tip over, so be careful not to over-fill it.

From the wheelbarrow, the asphalt will need to be placed in a dropbox. There are two ways to get the asphalt into the dropbox:

1. Ramp it. You can either use a big piece of plywood or you can rent a metal ramp at any local tool rental location.
2. Throw it. Carefully toss smaller pieces over the edge.



EVENT CONSIDERATIONS

Make the transformation of your space, however big or small, a celebration! **Promote** your event through the community, on and offline, well in advance to ensure you get a good crew of helpers. Provide **food and refreshments** to keep volunteers fueled — depaving is a hard day's work. Make sure there is an area to take a load off in the **shade**. Take the time to make your event safe, as well as fun, by preparing leaders ahead of time with the right **safety** procedures, and provide volunteers with gloves, glasses, and dust masks. Add in other **festivities and music** to polish off your depaving — try hosting your event in conjunction with other neighborhood activities to add more life to your event.

POST DEPAVING

SUBSURFACE

Beneath the pavement, there is typically about four to six inches of gravel. There are a number of ways to remove the gravel in order to get to the soil.

1. With small sites, the gravel can easily be shoveled out of the newly depaved area. Gravel can be reused to create walkways through gardens, filling potholes, create drainage areas, etc.
2. For larger sites, the gravel can be removed using heavy machinery. You can hire a local contractor to do this work, or rent a small backhoe or bobcat from a heavy equipment facility and do it yourself. If kept separate from other materials, gravel can also be hauled away in a dropbox and recycled at a local reuse facility.

SOIL RESTORATION

The biggest problem caused by heavy impervious surfaces is soil compaction. The weight of the pavement crushes macropores - the small spaces between the soil aggregate - preventing water, air, and roots from moving through the soil.

For small sites, a spading fork or a pickaxe should be sufficient to break up the compacted soil enough to begin amending it. Using farm implements, like a "deep-ripper" or a "chisel plow", will be more efficient in breaking apart dense soil at larger sites. After the soil is broken up and aerated, mixing in organic matter such as compost or a 3-way blended soil mix will help create a healthier soil profile and bring your site back to life.



LANDSCAPING

Now for the fun part! Using your site plan and planting plan as a guide, your team can begin to bring the site to life. While depaving is a great summer activity, plants shouldn't go into the ground until fall, when the temperature is cooler. Determine the best time of year to begin planting in your area to ensure the highest possible survival rate for the plants. Organize volunteer work parties to space out the work over several days and many hands.



À GO ON VERDIT!

Depave Paradise crée des
milieux de vie sains et
dynamiques en convertissant
l'asphalte en espace vert



Green
Communities



Projet
Bleue

[intact]















grazie!

luisa.ravanello@regione.emilia-romagna.it
info@elenafarne.it