Cerema

Blue and green infrastructure
Experiences of foreign cities

The Chicago Park System
The example of Lake Front Park

The city of Chicago was founded in the Great Lakes region in the late 17th century. It extends along the south-western shore of Lake Michigan (the second-largest of the Great Lakes by volume and part of the world's largest freshwater reserve).

1 An unusual city

With a population of 2.9 million people (2010), Chicago is the archetypal North American city with distinct urban units – sprawling suburbs of detached homes and a compact, vertical and dense city centre known as Downtown Chicago.

1.1 A chessboard urban structure

The central business district is home to the city's skyscrapers, laid out in blocks along streets and avenues arranged at right angles. This layout reflects the orthogonal scheme adopted under Thomas

Illustration 1: The Chicago skyline, including the Willis Tower which, at 442 m, dominates the city centre

Factsheet no. 02a - August 2011
Short version

Liberté • Égalité • Fraternité
RÉPUBLIQUE FRANÇAISE

MINISTÈRE
DE L'ENVIRONNEMENT,
DE L'ÉNERGIE
ET DE LA MER

Jefferson's Land Ordinance of 1785, which stated that every settler should have a clearly defined plot of land equal in size and shape to his neighbour.

These residential blocks form urban squares measuring 120 metres in length, standing at the intersections of avenues numbered from 1 to more than 1,000, easily identifiable on the ground and oriented according to the four points of the compass.

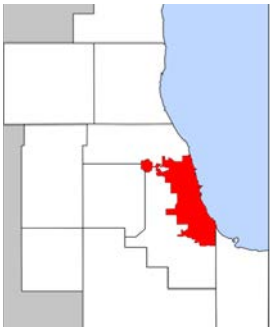
The city centre has some 270 skyscrapers, creating an imposing skyline that can be seen in its entirety from the shores of Lake Michigan.

1.2 A turbulent past

In 1871, the Great Chicago Fire destroyed three-quarters of Chicago's historic city centre. The rebuilding project was an opportunity for experimental new approaches in urban planning and architectural innovation. This period saw the emergence of new, more functional urban planning models – an approach that would later be dubbed the Chicago school.

The low-lying swamps were filled in to a height of more than four metres and wooden buildings were banned, to be replaced with steel-framed constructions. Until 1900, the city experienced exponential population growth due to a fast-paced economic

Illustration 2: Downtown Chicago



Illutration 3: The counties of Chicago Metropolitan Area

(credit: Clevelander [Public domain], via Wikimedia Commons)

Illutration 4: Geographical location of Chicago (credit: Uwe Dedering (personal work) CC¬BY ¬SA¬4.0 (www.creativecommons.org/licenses/by-sa/4.0), via Wikimedia Commons)

- Chicago: 2.84 million inhabitants
- Greater Chicago : 13.76 million inhabitants
- surface : 606 km²
- population size : 4.867 hab/km²
- State of Illinois, 20 districts with a Governor Mayor
- Altitude between 176m and 244m
- Humid continental climate : 909mm of rainfall per year

Illustration 5: Figures and data - INSEE 2007 - Consulate General of France in Chicago

boom. As building land became more expensive, skyscrapers were seen as a way to streamline land costs.

The invention of the hydraulic elevator provided a further boost to this type of construction. The world's first true skyscraper, the Home Insurance Building (42 metres tall), was opened in 1885.

Between 1918 and 1935, the municipality developed multi-level boulevards (Michigan Avenue), particularly in the area around Union Station (since covered by Millennium Park) and along the Chicago River (crossed by dual-deck bridges).

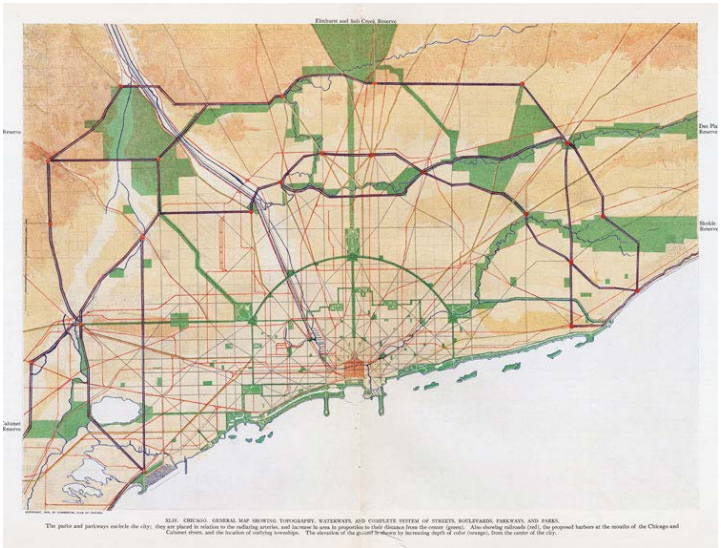
This concrete urban landscape is truly astonishing, with two-way roads on columns passing above the primitive land, with ramps providing access to the lower levels. Utility pipes, car parks, loading bays and boat houses are all embedded in this subterranean city. Non-circumspect visitors will be completely unaware that they are walking on raised roads and pavements, unless they take one of the flights of steps down to the Chicago River.

Chicago is a self-styled green city, as indicated by its motto "*urbs in horto*" (city in a garden). However, according to a study conducted by the Chicago Park District with the help of the Trust for Public Land[1], the ratio of green spaces per inhabitant is actually low.

In 2011, Chicago had 570 parks and public gardens covering 3,075 hectares (an average surface area of 5 hectares per unit and a ratio of 11 m² of green space per inhabitant, i.e. less than Paris).

2 The Chicago Master Plan

The Chicago Metropolitan Area's development is governed by a regional and metropolitan planning document known as the Master Plan (a forward-looking approach that bears many similarities with a regional integrated development plan, or SCoT).



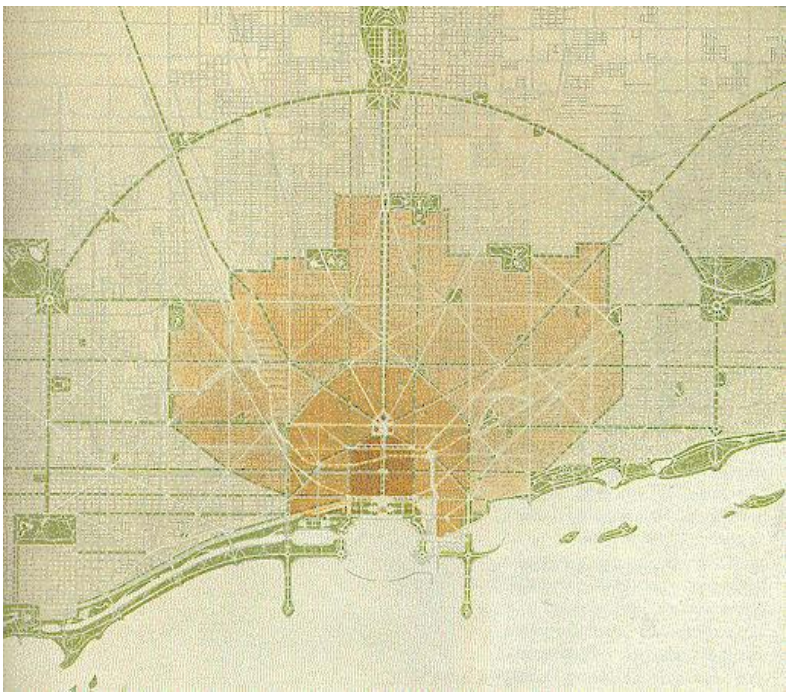
Illutration 6 a: System of parks, planted boulevards, parkways and riverways (credit: excerpt from the Burnham Plan, 1909)

The Master Plan sets 20-year land use planning and change of use guidelines for residential plots, highways and public spaces. This urban planning master plan covers the layout of communication networks, shopping districts, economic activities and sports and cultural facilities. The Master Plan also addresses the city's park system, reflecting both green infrastructure (Green Infrastructure Vision) and biodiversity (Biodiversity Recovery Plan).

However, this planning document has no legal value because it is not enforceable on third parties. In addition to the Master Plan, there are also district organisation plans, land use planning guidelines and a programming framework. It includes feasibility studies on specific areas (zoning) and is supplemented by the Capital Improvement Program, which assesses the investment value of urban projects.

1 The Trust for Public Land (TPL) is a non-profit organisation that facilitates the conservation of parks, gardens, historic sites, farmland and natural spaces. www.tpl.org

The Master Plan sets out the development costs for the city authority and private investors. Developers are required to pay a local infrastructure tax by the name of Tax Increment Financing (TIF). The Master Plan rules include a system of bonuses for developments that exceed the statutory density or height limits, provided that the developers create specific facilities and developments as necessary (e.g. public green spaces, green roofs or social housing). These tax instruments are extremely appealing, and the revenue is used to fund existing infrastructure improvement programmes and to compensate for potential harm at plot level.



Illutration 6 b: Close-up of Chicago city centre, Burnham Plan, 1909 (credit: Daniel Burnham (J. Crocker) [Public domain], via Wikimedia Commons)

Illutration 7: Chicago's chessboard-style urban structure

3 Lake Front Park

Chicago is known for the quality of its urban green spaces. Lake Front Park is one of the city's iconic parks, sheltered from the urbanisation that the city had experienced since 1830. This green strip ran along the shore of Lake Michigan for 42 km, from 71st Avenue in the south to Hollywood Avenue in the north, with an average width of 150 metres.

Today, Lake Front Park is a series of interconnected public parks that runs from the State of Wisconsin to the north to the State of Indiana to the south. A continuous, almost uninterrupted series of landscaped features links the parks to each other (Lincoln Park, Grant Park, Burnham Park, Jackson Park, Calumet Park), via planted promenades, cycle paths, footpaths, beaches and marinas. However, some restricted sections (city centre, southern section from Jackson Park to Calumet Park) pose obstacles to these landscaped features, particularly due to the presence of dikes and piers.

For comparison purposes, Lake Front Park is equivalent to a seafront urban park running from Menton to Nice in France. It is 1.5 km wide at its widest point and around 100 metres at its narrowest point. It would therefore form a linear, continuous buffer zone between urbanisation on one side and the coastline on the other.

Powerful organisations (Friends of the Parks and Chicago Wilderness) lobby the local authorities for development of the final miles, under the slogan Last Four Miles. These organisations call for unbroken continuity of the park through these restricted areas.

The planned projects include the creation of islands on land reclaimed from the lake, artificial beaches, reconstituted dunes, peninsulas jutting out into the lake, and pedestrian walkways. This project would complete a network of green infrastructure long written into the city's planning documents, resulting in the creation of around 200 hectares of new public parks and beaches.

Supporters of the Last Four Miles campaign state the following objectives in support of their cause:

- to increase the value of properties on the outskirts of the newly created parks;
- to encourage new small businesses to set up operations nearby;
- to extend and complete a continuous route along the shore of the lake for walkers, runners and cyclists;
- to create jobs in the construction of the new parks and the maintenance of facilities such as beaches, playgrounds and sports complexes;
- to protect the shore against storms and erosion;

© Certu

Illustration 8: View of Lake Front Park to the north, from the John Hancock Center skyscraper

- to establish new biotopes for aquatic plant life and to restore the dunes and glacial moraines;
- to improve public access along the entire shoreline of Lake Michigan;
- to create more green spaces and beaches in neighbourhoods where these are lacking;
- to promote a green corridor and improve the function of the coastal ecosystem.The origins of Lake Front Park

Frederick Law Olmsted, a famous 19th-century American landscape architect, is considered the father of green infrastructure in the United States. He was a firm believer in the principle that green infrastructure should never be interrupted.

When Chicago was awarded the right to host the 1893 World's Fair, Frederick Law Olmsted's idea was to create a green band of parks interconnected by parkways and riverways, which he dubbed the Park System.

As Olmsted himself wrote: "*The promenade is not yet recognised as an institution in Chicago, but there can be no doubt that, once created, the habit will become both popular and beneficial*".

Chicago's Park System encompasses the city's major natural sites – remarkable viewpoints, river banks and picturesque landscapes. Its purpose is to provide local residents with "the very best that nature has to offer".

The Park System forms an interconnected network, designed to presage and anticipate the city's future development and provide for its future residents, with equal distribution of green spaces.

■ A life-size experiment

Frederick Law Olmsted experimented with his Park System at the site of the 1893 World's Fair. He and his trusted colleague Calvert Vaux (1824-1895) created two urban parks (today known as Washington Park and Jackson Park), connected by a promenade avenue (Midway Plaisance).

The promenade avenue is a "parkway" (a contraction of the terms "highway" and "park land"). It is a planted boulevard measuring 1 mile (1.6 km) in length and 140 metres in width, with a generous, lawned, central strip. In the initial project, the central strip consisted of a canal, although this was later filled in.

The parkway is a "scenic drive" – a pleasant, comfortable way to travel from one park to the other. The side paths have lawned surfaces, tree-lined avenues interspersed with flower beds, and footpaths. The project was a forebear of the subsequent Park System that would be developed throughout the Chicago Metropolitan Area.

Daniel Hudson Burnham and Edward H. Bennett, a pair of architects and planners employed by the city's authority, ensured that Chicago's planning document, published in 1909, faithfully reflected Olmsted's initial

This planning model, with green spaces in the form of parks, parkways and riverways, proved popular with authorities in both Chicago and Boston, and gave rise to Boston's Emerald Necklace – a chain of parks forming a so-called "emerald necklace" around the city.

The Burnham Plan included a development and land use master plan of stunning graphical quality, revealing the urbanisation centres, railway lines, road lanes, ports, and industrial and manufacturing zones to a high degree of precision.

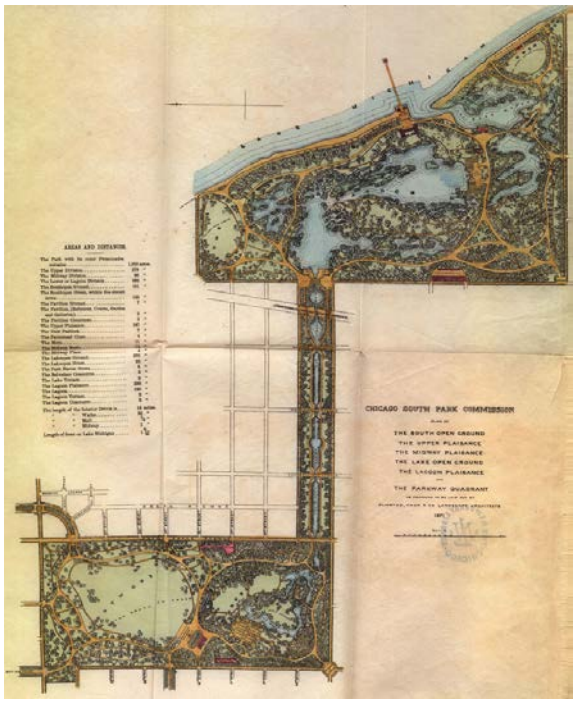


Illustration 9: Close-up view of the two parks (known today as Washington Park and Jackson Park, which borders the lake), designed by Frederick Law Olmsted in Chicago in 1871. These two parks are linked by a parkway.

Source: Chicago South Park Commission Plan, 1871 (credit: The Newberry Library, http://burnhamplan100.lib.uchicago.edu)

The Burnham Plan is recognised for its forward-looking vision, making Chicago one of the first US cities to have its own comprehensive urban planning document structured by a Park System.

Notably, the document included plans to create a protective strip along the shore of the lake, stretching from one end of the city to the other. As Burnham himself wrote: "*The lakefront by right belongs to the people... not a foot of its shores should be appropriated to the exclusion of the people*".

Burnham's humanist vision of a lake front park gained traction. Over time, Lake Michigan and its shores became protected greenbelt, open to the public without discrimination on the grounds of ethnicity or social class. These places are now an integral part of the city's identity.

4 Biodiversity: a new challenge

The Chicago Metropolitan Area's system of interconnected parks and promenades is the result of a lengthy urban planning process dating back to the 1900s.

Today's well-established system was the original brainchild of a set of pioneers such as landscape architect Frederick Law Olmsted and urban planner Daniel Burnham, who called for the creation of a "Park System" consisting of rivers, natural spaces, parks and gardens linked by "riverways" and "parkways".

One of the advantages of the Park System is that it was able to accommodate the city's exponential growth as a result of its economic boom, with these green spaces protected for walking and access to nature.

Burnham's Master Plan would go on to become the blueprint for the North-American city. Produced in 1909, this urban planning document established the principle of creating a protected buffer zone between the city and Lake Michigan, and extending "green infrastructure" of gradually increasing size and thickness from Lake Front Park to inland areas.

In Chicago, the emphasis has firmly been on scenic beauty and the social dimension of nature in the city, the main priority being to provide recreation and relaxation spaces for local residents based on the pragmatic principles of proximity and landscaping quality. In the 1990s, the Park System was seen in a new light – not just for its landscaping qualities but also for its environmental benefits,

© Certu

Illustration 10: Restoration of the prairie ecosystem in Northerly Island Park, a former industrial wasteland

with parks and gardens viewed as habitats for biodiversity (especially iconic species).

■ Changing the narrative on the Park System

In 2011, powerful environmental conservation organisations began a determined lobbying campaign in support of the environmental role of the existing Park System.

In the United States, the vast national parks of Yellowstone and Yosemite are celebrations of the virtues of wild, unspoiled nature, virtually untouched by human activity – what Americans call the "wilderness".

In its biodiversity recovery plan, Chicago Wilderness focuses on "native species" and "historic ecosystems" and stresses the need to "return natural communities to sufficient size for viable animal populations by restoring or recreating them".

The aim is to maintain and expand natural communities typically found in North America (species range), with a view to restoring indigenous biodiversity, in particular by developing nature reserves alongside existing green spaces (Bill Jarvis Migratory Bird Sanctuary), restoring degraded dunes (Montrose Beach Dunes), and rehabilitating landscaped ponds (Lake Pond).

In practice, the creation of a Park System takes a variety of different forms at different scales of the Chicago Metropolitan Area. In streets and local neighbourhoods, rows of trees are planted along boulevards and around squares. Gardens are created on local infill sites (Ping Tom Park in Chinatown). Financial assistance is available to fund the creation of green roofs on the tops of skyscrapers, to reduce urban heat zones (Chicago City Hall).

Chicago's Millennium Park and the Last Four Miles of Lake Front Park reflect a determined urban renovation policy. The decline of the manufacturing industry has created opportunities to requalify the urban fabric by freeing up land. Long-abandoned areas of urban wasteland are now finding new vocations. The city authority is turning the spaces into parks for leisure and culture purposes, extending the city's green spaces on the basis that this move will have economic, social and environmental benefits for the entire community.

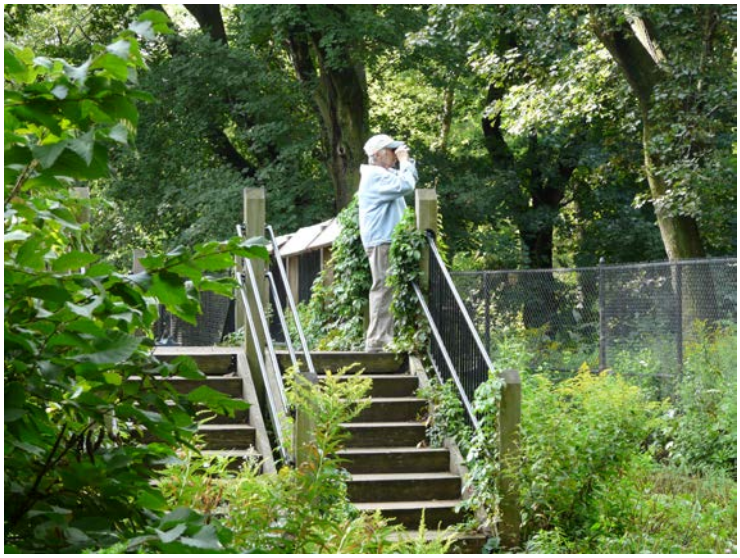
5 Ten key points

➲ A planned Park System

Chicago system of parks and green spaces is the result of a deliberate, carefully considered land use planning policy. The city's parkways and riverways are laid out in a perpendicular grid-like fashion, pre-empting its urbanised areas.

The founding principle of this planning scheme is that it is bound by the limits of a chessboard-style plan. This has the benefit of releasing planners from the shackles of physical constraints (especially the land, terrain and waterways), as well as from easements.

The communication routes, roads and, to a lesser extent, railways follow this same grid pattern.



© Certu

Illustration 11: Bird hide in the Bill Jarvis Migratory Bird Sanctuary

This grid-like division of land also affects the expansion of the urban limit and changes to agricultural land use.

The Park System forms the structural green and blue framework on which the city of Chicago has developed. In France, urban renovation (industrial wasteland) and river bank restoration projects offer a good opportunity to create blue and green infrastructure in cities.

A Park System in need of restoration

Burnham's 1909 Master Plan repeats the outline of the parkways and riverways originally designed by landscape architect Frederick Law Olmsted for the 1893 World's Fair.

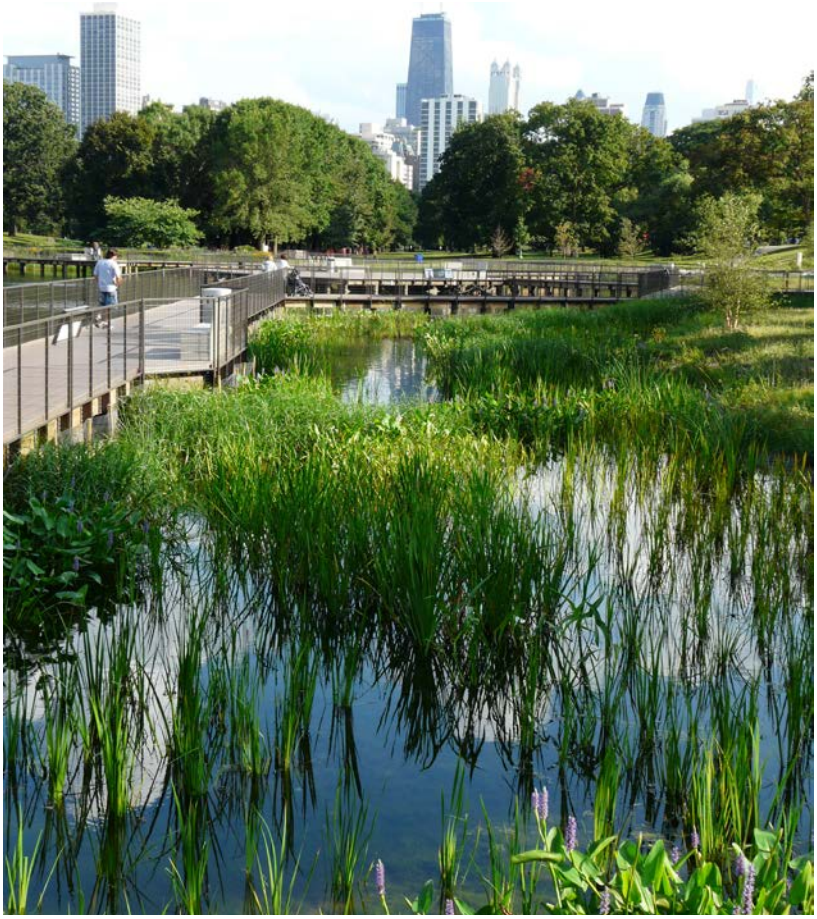
This green network connects parks and gardens in existing and new districts through a series of parkways and riverways. The Park System also encompasses existing natural spaces, wetlands, rivers, forests and farmland, creating a green framework known as the Green Infrastructure.

Burnham's Master Plan provides a precise description of a Park System that, at least in theory, is capable of accommodating unlimited development based on the city's urbanisation priorities. This network of parks and promenades is built on planted radial routes and thoroughfares, the size and thickness of which increase gradually in the suburbs.

However, the Park System set out in Burnham's Master Plan has been thoroughly overhauled. Eroded by urbanisation and annexed by roads, the green infrastructure has been unable to withstand the test of time.

The project to restore nature to the Chicago River is one notable example of the re-appropriation of water in the city. The artificialisation of the river was taken to such an extent that its original course was reversed to avoid pollutants entering the lake (from which the city draws its drinking water).

Chicago has developed a series of action plans to restore the river ecosystems, including reorganising public access, creating planted footpaths along the banks, and improving water quality. Businesses and individuals have access to a series of tax relief schemes for requalification of their land by the river banks. The city's authority, meanwhile, has commissioned habitat studies, plant and wildlife inventories, and aquatic ecosystem mapping exercises.



© Certu

Illustration 12: South Pond, to the south of Lincoln Park (restored in 2010) has undergone environmental engineering work

© Certu

Illustration 13: Bill Jarvis Migratory Bird Sanctuary

The aim is to strengthen the connection between the river and the city while maintaining sustainable economic activities (land reserved for environmentally friendly businesses, financial support for river-based heavy goods transportation, introduction of river shuttle services).

A multifunctional Park System

Lake Front Park is a linear green infrastructure and a flagship example of the Chicago school of planning.

With its interconnected series of parks, gardens, beaches and dunes, it is included in the Master Plan as a "green infrastructure". This 42 km long strip acts as a buffer, protecting the shores of Lake Michigan.

Lake Front Park is a chain of multifunctional parks and green spaces where users can engage in open-air sports activities. It also features vast open meadows with playgrounds, sports pitches, marinas, leisure facilities, beaches, nature observation points in wildlife reserves, botanical gardens and watchtowers.

These spaces are interconnected by paths designated for environmentally friendly modes of transport, from one end of Lake Front Park to the other. The inclusion of a cycle path is an example of social mediation and symbolises recognition of the environmental and landscaping quality of Lake Front Park.

Transforming the city's image

Prior to the 1990s, Chicago was an ageing post-industrial city. The city's image was transformed through compelling, unrelenting political will, turning Chicago into the greenest city in the United States. For the last 20 years, Chicago has sought to become a greener, more attractive city, coupled with a move to a service-based economy. The authorities have engaged in a series of sustainable development initiatives, including installing green roofs, making housing more energy efficient and mapping urban heat zones.

Chicago's appeal is founded on the quality of its development projects and on its image as a green city. The city has requalified its public spaces, especially as parks and gardens. Here, as elsewhere, quality of life is now high on the political agenda. Chicago actively communicates about its flagship operations, such as the prestigious Millennium Park. The authorities lead by example on each and every new environmental initiative, with the green roof of Chicago City Hall acting as an educational showcase.

Chicago has gradually reversed its negative image by focusing its efforts on developing and improving the living environment. Communication tools play an essential role in transforming the city's image, and they are used systematically for all operations, with a view to educating and involving the local population. This coordinated "expertise and information" policy has gradually heightened the city's appeal to the outside world.

Powerful lobbying by organisations

Environmental conservation organisations are highly professional and influential. They are able to produce forward-looking analyses, garner public support for common causes and lobby decision-making bodies.

Chicago Wilderness is a federation of 160 organisations working together to call for completion of the "Last Four Miles" of Lake Front Park. The federation pours vast amounts of energy into this wide-ranging project, producing models and detailed land use plans, publishing newsletters, and organising fun events in an effort to persuade elected officials to support the campaign.

Diverse protected statuses

The Chicago Metropolitan Area Park System comprises more than 120,000 hectares of nature reserves, parks, private forests and natural sites, with a range of different protected statuses.

A Park System extension programme states that the spaces included in this new infrastructure must be a representative sample of the local ecosystems and associated indigenous communities (red list of ecosystems and species).

The 1909 Park System is now being enhanced through a series of initiatives, such as the restoration of urban lawns to grassland meadows, the purchase of natural plots, the protection of areas of botanical interest, the creation of wildlife reserves, and calls for generous donors to purchase and open new green spaces in strategically important locations. There is an annual competition for new "possessions", which attracts wide media attention (Chicago Tribune, Chicago Wilderness Magazine).

The successful extension of Chicago's Park System relies on highly effective coordination between public and private partners (businesses, academics, non-profit organisations and citizens).

Relentless project communication

In the United States, many public spaces (pavements and squares) are funded and managed by local residents. The city authority actively encourages citizen-led schemes and initiatives as part of efforts to improve quality of life for the local population. It also initiates and coordinates various action plans:

- The Chicago Trees Initiative supports projects to plant trees in the streets.
- The Chicago Sustainable Backyard Program encourages the creation of public gardens, especially rain gardens, to filter pollutant emissions at source and to limit run-off water discharge into the environment.

The city authority's departments provide comprehensive technical assistance to local residents (training courses, advice, educational guides). As well as providing financial incentives through these programmes (discounts on plant purchases, water butts and composters), these citizen-led initiatives also help to promote and strengthen the services that nature provides in the city.

© Certu

Illustration 14: A bird and butterfly sanctuary within a historic park

Well-informed residents play an active role in improving their living environment. The citizen-led schemes have transformed the appearance of what was once a city dominated by stone and concrete.

Citizen-focused communication is essential, ensuring that local residents are fully involved in measures to bring nature into their neighbourhood. So why not encourage our municipalities to take similar steps to create a network of sustainable private gardens?

Changing land use planning in favour of biodiversity

Historically, Chicago's Park System was designed for walking and leisure activities. The parks and gardens were designed to landscaping models inherited from the 19th century, as places for relaxation and recreation.

© Certu

Illustration 15: Restoration of dunes at Montrose Beach, on the site of a former car park

Chicago's biodiversity recovery plan signalled a clean break with existing landscaping and land use planning methods, instead proposing the expansion of this network of green spaces within the city itself, creating protected wildernesses (where necessary reclaimed from converted urban parks) where nature could reclaim its rightful place.

Chicago Park District has now initiated a series of environmental developments in the city's parks and gardens. Around 50 protected wildernesses have been created to date, as part of efforts to strengthen local biodiversity. Low-cost nature reserves have been established in a number of urban parks located alongside dense urban neighbourhoods, simply by enclosing an existing green space and allowing nature to take its course without extensive human intervention (i.e. no cutting down trees, mowing or using plant treatment products).

As well as sustainable urban green spaces, Chicago has also hit another important milestone. With the aid of scientists, the city's authority is currently experimenting with the reintroduction of lost ecosystems and even plans to create protected wilderness zones within public urban parks for this purpose.

Under France's national biodiversity strategy, urban authorities are also seeking to create these "wildernesses" in a number of parks.

➲ Running public events such as BioBlitz

BioBlitz is the evocative name given to regular weekend events, during which participants collect plants and observe wildlife.

More specifically, a BioBlitz involves surveying a site in detail over a continuous 24-hour period. These events generally involve academics, naturalists, experts in a particular taxon, and of course the general public and press.

The aim of these fun, one-day events is to enhance scientific understanding, carry out a situation analysis of biodiversity in a given location, and educate the public about the importance of conservation.

© Certu

Illustration 16: Restoration of traditional horticulture plots into meadows, in one of Lake Front Park's historic parks. The meadow ecosystem is a natural feature of the Great Plains

A biodiversity observatory manages and pools the gathered data for all taxons.

These BioBlitz events are fun, popular occasions that generate shared knowledge about biodiversity in the city. Why not plan events of this type in France?

A BioBlitz can produce data (participatory sciences) that can then be fed into France's Nature and Landscape Information System (SINP).

➲ Educating the public about the ecosystem services provided by nature

The supporting arguments for extending Chicago's Park System consistently focus on the ecosystem services provided by nature.

The records, classifications and positive impacts of green infrastructure are detailed extensively in reports, plans, essays and articles, with a particular emphasis on economic assessments and value analyses (pollution avoided, carbon captured, structural value, services provided).

Moreover, the ecosystem services provided by the parks are covered not only in the scientific literature, but also in communication and education campaigns targeting the public, and young people in particular.

© Certu

Illustration 17: The restored shores of South Pond in historic Lincoln Park

6 Conclusion

Chicago's planned Park System has guided the city's development since the 19th century, when designers and planners took a keen interest in providing universal access to nature and improving the living environment in urban areas.

Olmsted set about incorporating natural elements into his plans, while remaining sensitive to the natural geography of the area.

To this day, the city's planted boulevards, parks and promenades form an unbroken network that structures the city over a space extending dozens of kilometres. The sheer size and scale of this network is greater than any equivalent here in Europe.

Modern-day efforts to renovate the Park System offer an opportunity to gradually incorporate new challenges such as biodiversity, environmentally friendly transport, landscaping, climate change, leisure and reforestation.

The problems that Chicago has successfully addressed are very similar to our own. Although Chicago's Park System is not comparable with the establishment of green and blue infrastructure in urban areas, the city's experience offers some interesting lessons that should inspire other local authorities:

- ecosystem restoration
- creation of protected wilderness areas, including inside historic parks
- public awareness about ecosystems
- events to enhance knowledge about nature.

Bibliography

- Arnould Paul, Glon Éric, Wilderness, usages et perceptions de la nature en Amérique du Nord, Annales de Géographie n° 649, 2006/3, pp 227 -238.
- Boucher Isabelle, Le Millénium Park de Chicago, Urbanité (la revue de l'ordre des urbanistes du Québec), 2005, 8 p.
- Burnham Daniel H., Bennett Edward H., Plan of Chicago - Centennial Edition, First published in 1909, The Great Books Foundation, 2009, 165 p.
- Castex Jean, Chicago 1910- 1930 - Le chantier de la ville moderne, Éditions de la Villette, 2009, 396 p.
- Chicago Metropolitan Agency for Planning, 2010, Go to 2040 - Comprehensive Regional Plan, duplicated doc., 199 p.
- Chicago Wilderness, 1999, Biodiversity Recovery Plan, Doc. duplicated, 192 p.
- Delfante Charles, Pelletier Jean., Villes et urbanisme dans le monde, Éditions Armand Colin, 2000, 199 p.
- Grafmeyer Yves, Joseph Isaac, L'École de Chicago. Naissance de l'écologie urbaine, Paris, Aubier, 1984, 378 p.
- Kristine M. Williams, Levinson Herbert S., Access Management: Past, Present, and Future, 8th National Access Management Conference, Program Director, Planning & Corridor Management, Baltimore,2008, 20 p.
- Sally A. Kit Chappell, Chicago's Urban Nature - A Guide to the City's Architecture+ Landscape, The University of Chicago Press, 2007, 253 p.
- Schwieterman Joseph P., Mammoser Alan P., Beyond Burnham - An Illustrated History of Planning for the Chicago Region, Editions Lake Forest College Press, 2009, 232 p.
- Werquin Ann Caroll, Boulevards, rondas, parkways...des concepts de voies urbaines, Éditions du Certu, 2000, 161 p

Websites

- City of Chicago website
  www.cityofchicago.org
- Chicago Metropolitan Agency
  www.cmap.illinois.gov
- Chicago Climate Action Plan
  www.chicagoclimateaction.org
- Burnham Plan Centennial website
  http://burnhamplan100.lib.uchicago.edu
- WRD Environmental
  www.wrdenvironmental.com
- Chicago Wilderness
  www.chicagowilderness.org
- Chicago Park District
  www.chicagoparkdistrict.com
- Chicago Trees Initiative
  http://chicagorti.org
- Trust for Public Land
  www.tpl.org
- Friends of Chicago River
  www.chicagoriver.org

Contributors

- Jérôme Champres (Cerema Territoires et ville)
- Emmanuel Boutefeu

Proofreader

- Jessica Brouard-Masson (Ministère en charge de l'environnement)

We would like to thank:

City of Chicago, Department of Environment, Natural Resources & Water Quality

- Aaron Durnbaugh, Deputy Commissioner, adurnbaugh@cityofchicago.org

WRD Environmental, Chicago Center for Green Technology

- Sarah Abu-Absi, Program Manager, Natural Resources & Water Quality, sarah.abu-absi@cityofchicago.org

Embassy of France in Washington, D.C

- Olivier Pairault, Deputy Consultant, Climate Change and Ecology, Olivier.PAIRAULT@dgtpe.fr

Embassy of France in Washington, D.C

- Olivier Pairault, Deputy Consultant, Climate Change and Ecology, Olivier.PAIRAULT@dgtpe.fr

Consulate General in Chicago

- Adèle Martial, Science and Technology Officer, adele.martial@diplomatie.gouv.fr

Contacts

- jerome.champres@cerema.fr

Translation
Birdwell Institute
Lyon

Designing
Cerema Territoires et ville
Pubishing Department
Lyon

Printing
Jouve
Mayenne

English version

2017/10

Online store: catalogue.territoires-ville.cerema.fr

Foreword for publications translated into foreign languages

The purpose of translated documents and publications is to pass on to non-French speaking readers the French know-how set out in the original publication, whether this concerns methodologies, tools or best pratices. Original publications in French are subject ti a checking process, which leads to a Cerema commitment regarding their content. English versions do not undergo the same process, and consequently carry no Cerema commitment. In the event of differences between the English and the original French text, the French text serves at the reference.

Centre d'études et d'expertise sur les risques, l'environnement, la mobilité et l'aménagement - www.cerema.fr
Cerema Territoires et ville - 2 rue Antoine Charial - 69426 LYON cedex 03 - Tél. +33 (0)4 72 74 58 00
Siège social : Cité des mobilités - 25 av. François Mitterrand - CS 92803 - 69674 BRON Cedex - Tél. +33 (0)4 72 14 30 30