

Changer de paradigme avec la nature, le vivant,
pour miser sur le biomimétisme et agir sur les villes?



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Nos missions

Accélérer le biomimétisme



FEDERER

Identification de **400 acteurs** sur le territoire national et collaborations à l'international (Europe, Japon, Etats Unis).



ACCOMPAGNER

Accompagnement de plus de **50 projets industriels** – de l'étude bibliographique au prototype préindustriel.



DÉVELOPPER LES MÉTHODOLOGIES

Lancement de **3 thèses et 1 Post Doctorat**



CONTRIBUER A LA FORMATION

Plus de **600 heures de cours et conférences**.



COMMUNIQUER

Plus de **3000 apparitions** presse et média



DÉMONTRER

Préfiguration de plateformes techniques et développement de démonstrateurs – **BIOMIG 2021**



Architecture



Biologie



Chimie



Design



Environnement



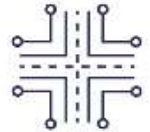
Ingénierie



Innovation



Physique



Urbanisme

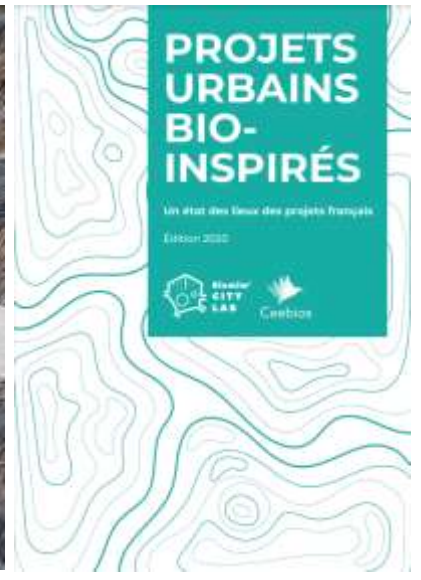
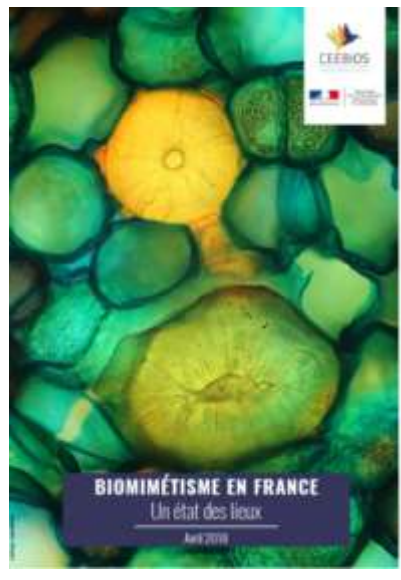
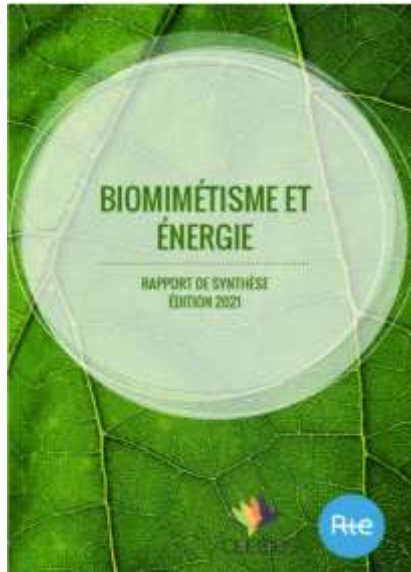


Notre écosystème






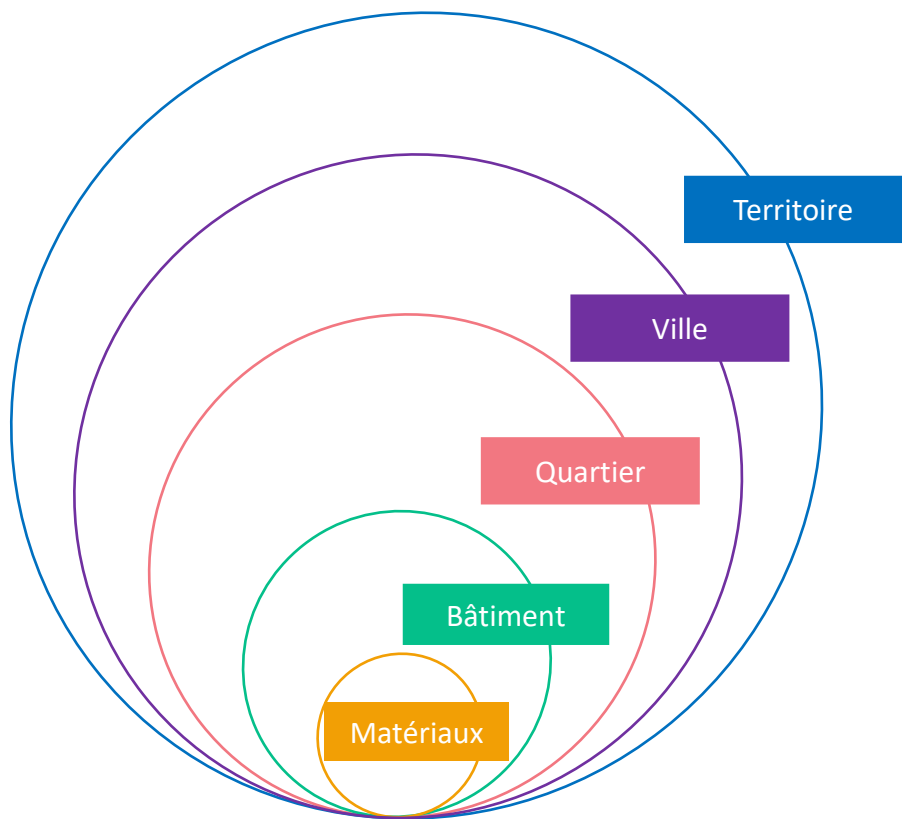
Rapports publics Ceebios





Villes bio-inspirées

 Champs d'application : du matériau au projet urbain



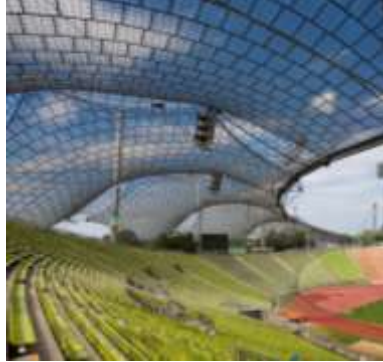


Biomimétisme appliqué à la Ville

Diversité des challenges



ENERGIE



MATERIAUX



STRUCTURE



MANUFACTURE



FLUX



DECHET





Une brève histoire de l'habitat bio-inspiré

Cycle de Hype

ATTENTES

Pic de attentes
'Biology-push'



Aujourd'hui, 2021



Plus de 100 projets bio-inspirés

Plus de 50 outils et méthodes



Eastgate
(1996)

West german
pavilion (1967)



2020

Plateau de productivité

Gouffre des
désillusions

Outils, normes
et méthodes

Pavillons de
recherche ICD/ITKE



Facades biomimétiques

TEMPS

(Cruz 2021, Adapté de Pawlyn 2018)

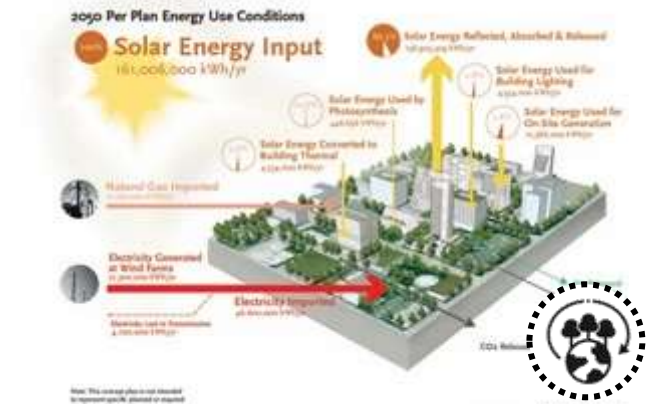
Lloyd Crossing, Portland



Pre-development Habitat Conditions
Tree cover 90%
 54 acres of Mixed Conifer Forest
 Broad Diversity of Wildlife Species



2050 Habitat Conditions
Tree cover 25-30%
 Potential native tree species include Douglas Fir, red alder, lightleaf sycamore





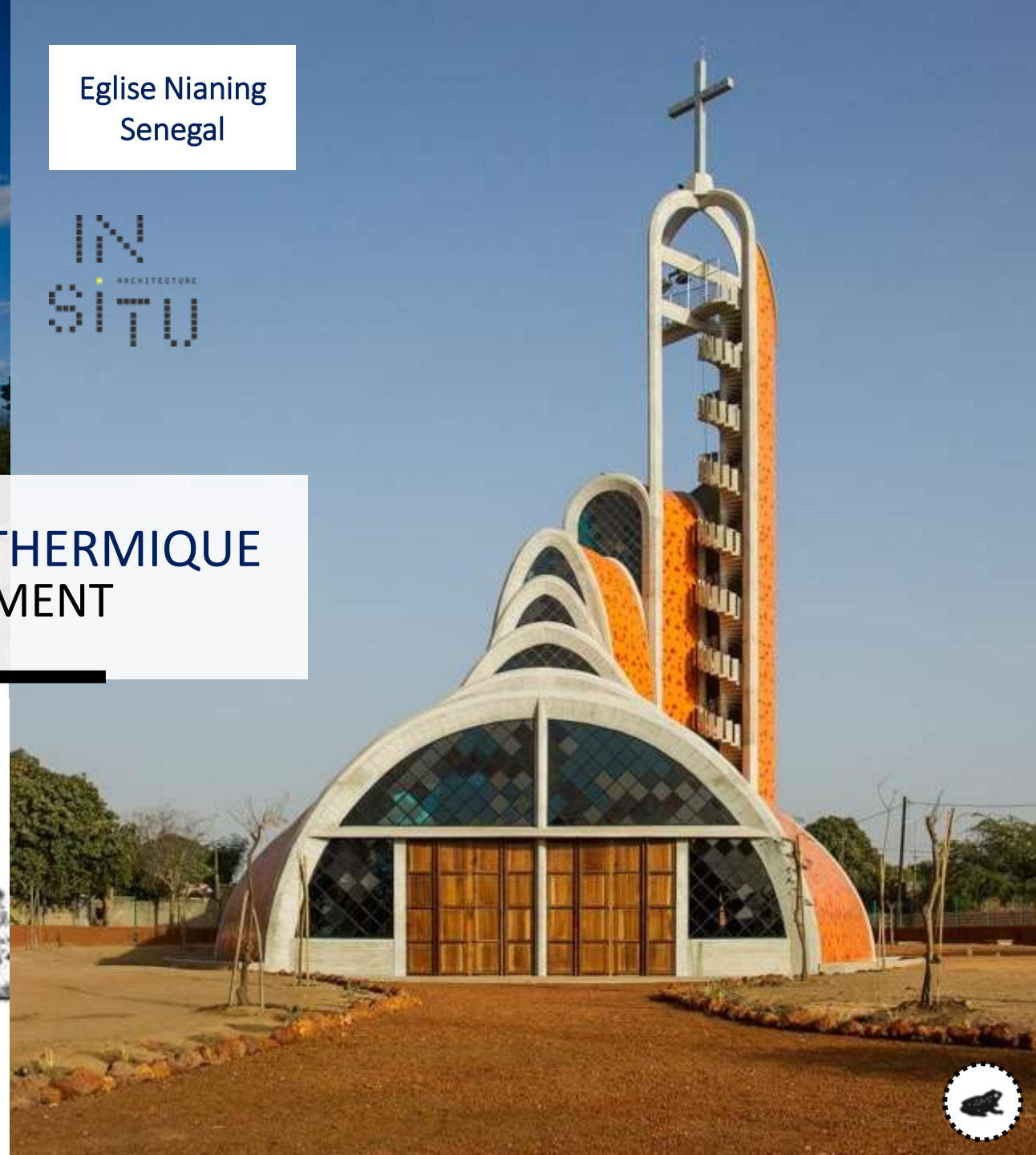
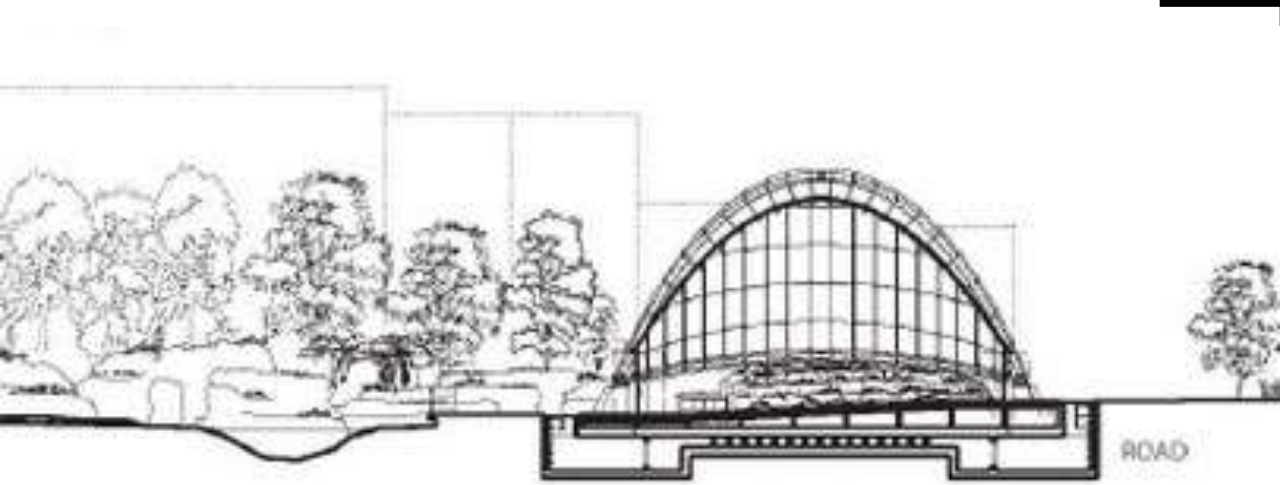
Davies Alpine House, UK



Eglise Nianing Senegal

IN
SITU
ARCHITECTURE

CONFORT THERMIQUE
BATIMENT



Introduction au biomimétisme

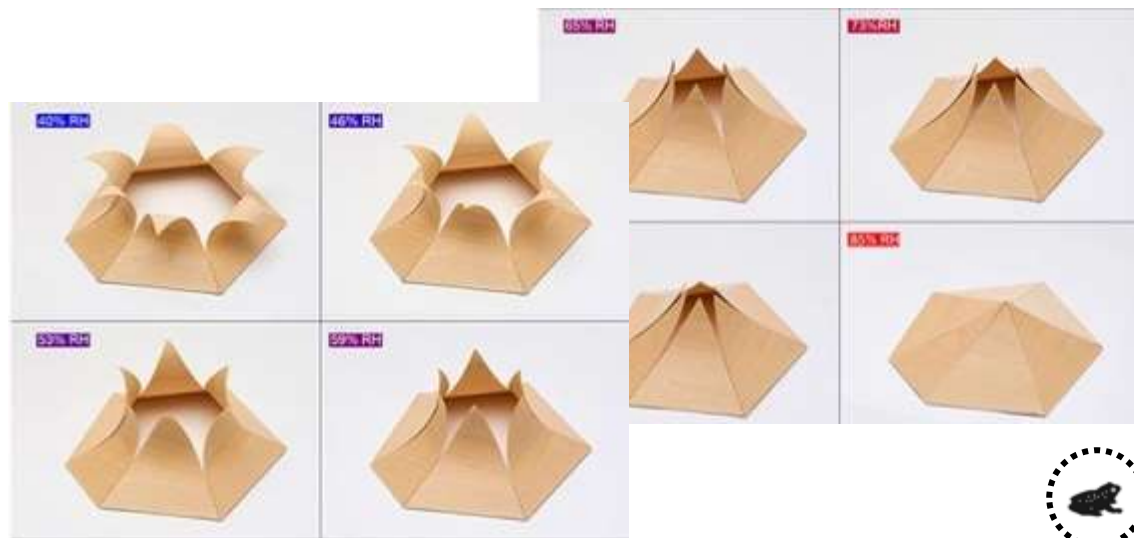
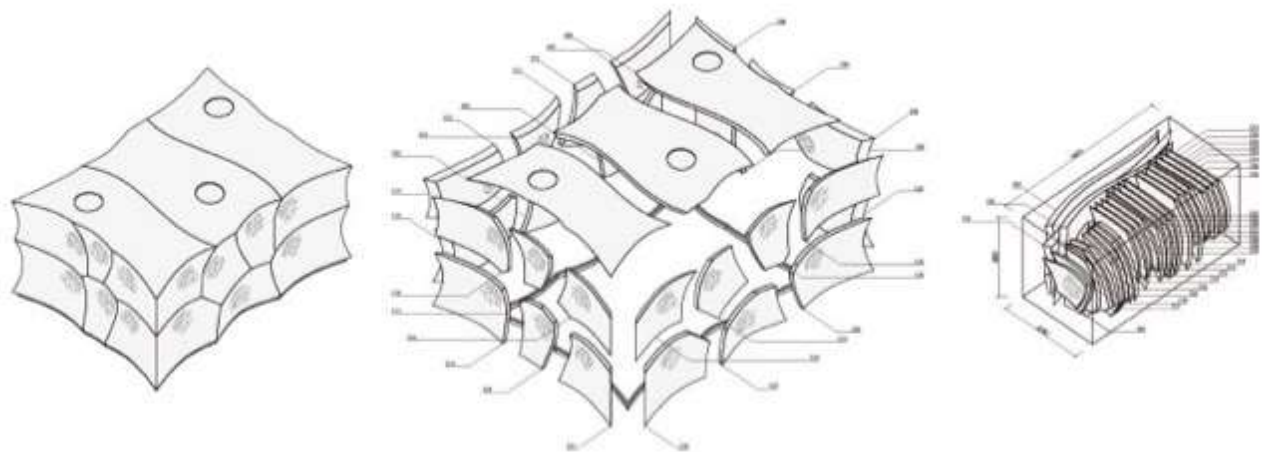
Ecole des sciences et de la biodiversité, Boulogne



Pavillon
HygroSkin



CONFORT THERMIQUE
MATERIAU





Matériaux

Mogu

Matériaux naturels issus des champignons:
(Planchers, panneaux d'isolation thermique,
modules d'absorption acoustique, carreaux
décoratifs,...)



mogu

<https://www.mogu.bio/mogu-products/>

Purebond

Matériaux en bois sans formaldéhyde
(cloisons...)



PureBond.
HARDWOOD PLYWOOD

<https://purebondplywood.com/>

Interface

Moquettes recyclées, dalles facilement
changeable (système d'accroche du
gecko). Dalles certifiées Carbon Neutral
Floors™. Patron aléatoire.



Interface®

<https://www.interface.com/EU/fr-FR/homepage>



Etat de l'art des projets urbains bio-inspires français

Ceebios et Biomim'City Lab

Visuels Ceebios sur une base de mock-up réalisés par Anthony Boyd Graphics



Guide CODIFAB,
Conception de bâtiments sans équipement.
Low tech, biomimétisme et frugalité

Accès en ligne :
<https://www.codifab.fr/actions-collectives/bois/limiter-lusage-des-equipements-quelles-solutions-pour-la-construction-bois-2537>



Urbanisme et biodiversité

VERS UN PAYSAGE VIVANT
STRUCTURANT LE PROJET URBAIN
Sous la direction de Philippe Clergeau



Review

Urban Ecosystem-Level Biomimicry and Regenerative Design: Linking Ecosystem Functioning and Urban Built Environments

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Abstract: By 2050, 68% of the world's population will likely live in cities. Human settlements depend on resources, benefits, and services from ecosystems, but they also tend to deplete ecosystem health. To address this situation, a new urban design and planning approach is emerging on regenerative design, ecosystem-level biomimicry, and ecosystem services theories, it pre-designing projects that reconnect urban space to natural ecosystems and regenerate whole ecosystems, contributing to ecosystem health and ecosystem services production. In this paper, we review ecosystems as models for urban design and review recent research on ecosystem services production. We also examine two illustrative case studies using this approach: Lavasa Hill and Lloyd Crossing in the U.S.A. With increasing conceptualisation and application, we argue that this approach contributes positive impacts to socio-ecosystems and enables scale jumping of regenerative practices at the urban scale. However, ecosystem-level biomimicry practices in urban design to regenerate impact still lack crucial integrated knowledge on ecosystem functioning and ecosystem services production, making it less effective than potentially it could be. We identify crucial knowledge where further research is needed and pose further relevant research questions for ecosystem-level biomimicry approaches aiming for regenerative impact more effectively.

Keywords: ecosystem services production; ecosystem-level biomimicry; urban regenerative design; sustainable urban design; urban ecosystems



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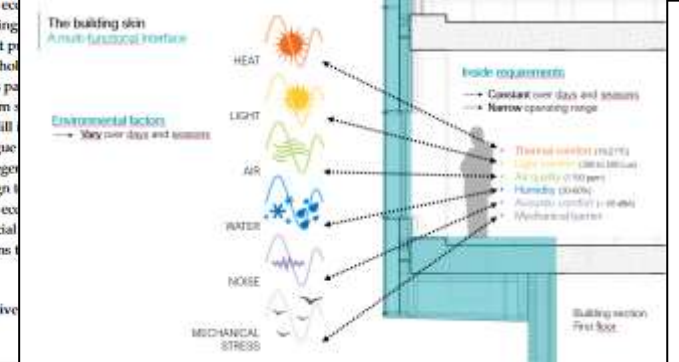
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1. Introduction

Cities are the primary habitat of human beings. By 2050, 68% of the world's population will likely live in urban centres, representing more than 6 billion urban dwellers [1]. Human settlements are dependent on ecosystem services; that is, the natural benefits, goods, and services derived from ecosystems. Simultaneously, urbanisation and urban activities are a prominent cause of ecological process simplification, biodiversity loss, and ecosystem health reduction [2]. Anthropogenic alterations to ecosystems reduce their capacity to create benefits, goods, and services that are both vital to and are expected by society [3].

To engage with these challenges, regenerative design aims to create urban projects that promote positive impacts, allowing social and ecological systems to co-evolve and thrive [4,5]. In this context, there is significant evidence that a new regenerative urban design approach is emerging which relies on ecosystem-level biomimicry theories to integrate and more fully take account of ecosystem health alongside urbanisation processes, and therefore contributes to the possibility that the regenerative paradigm shift can 'scale jump' to beyond the building scale to the urban scale [6,7].

Biomimicry draws upon emulation of, and knowledge transfer from, living organisms and whole ecosystems to find solutions to human problems [8]. In the built environment



Aller plus loin



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- PARIS 19.03
- MADRID 26.03
- BELGRADE 09.04
- MALMÖ 16.04
- SABDEN 20.04

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