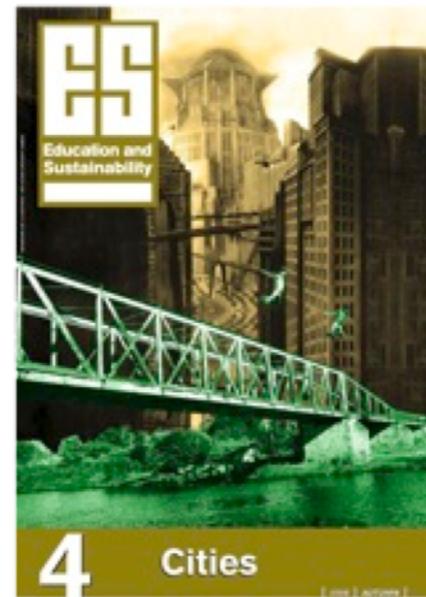
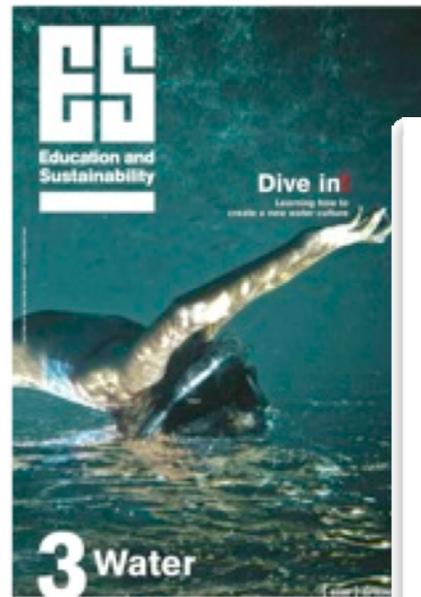
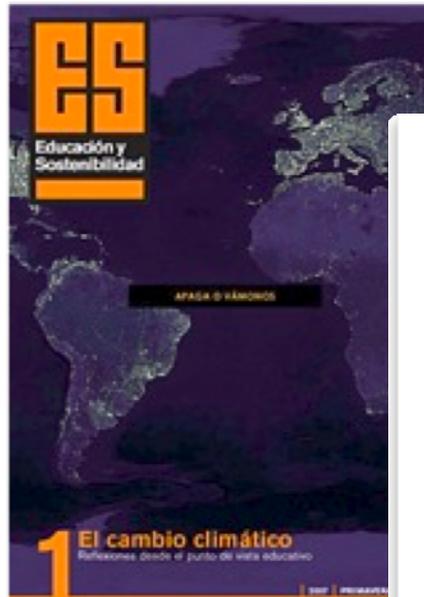
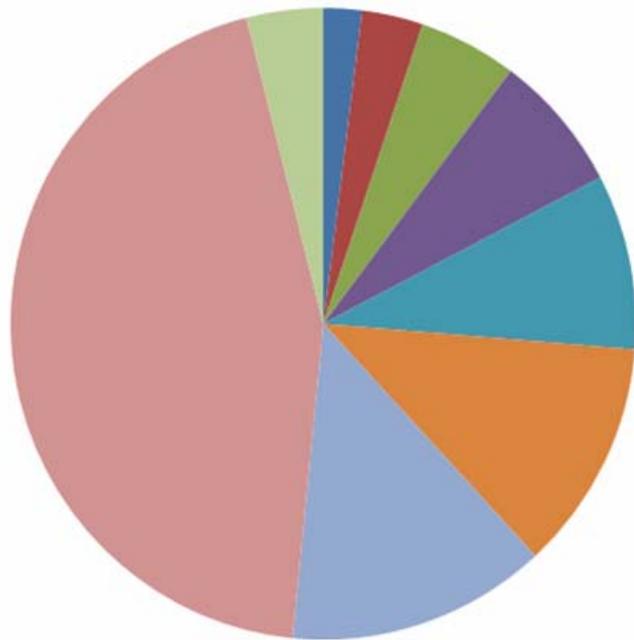


Education & Sustainability



Targeted at teachers

....in informal and formal education

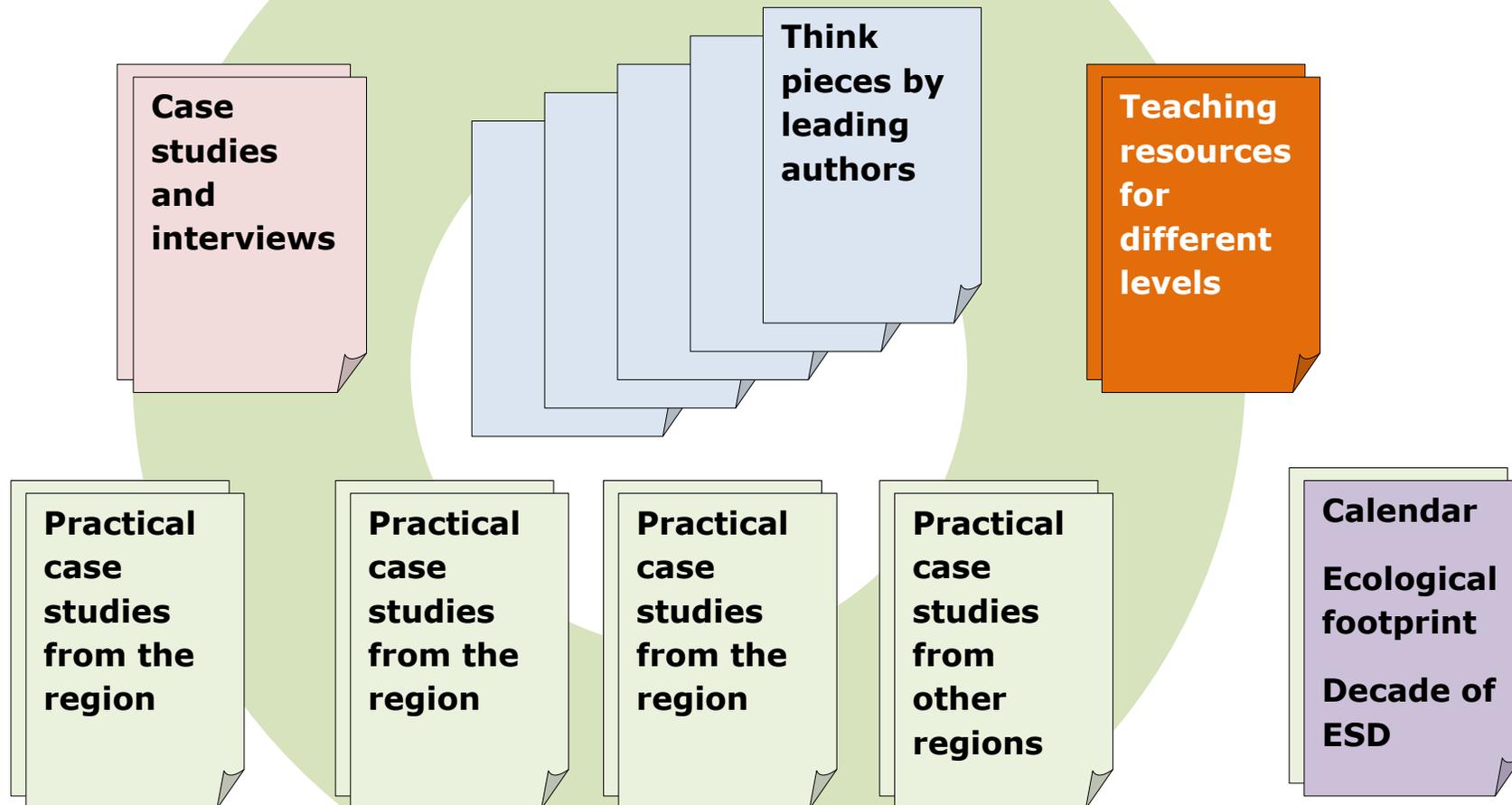


- Subscriptions
- Teaching resource centres
- Environmental education
- Department of environment
- Eco-schools network
- Municipalities
- Primary schools
- Secondary schools
- Universities

1	2.000	Catalan · Spanish
2	3.000	Catalan · Spanish
3	4.000	Catalan · Spanish
4	4.000	Catalan · Spanish · English
5	4.000	Catalan · Spanish · English · Swedish

How can learning contribute to

....selected sustainability issues?





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Back to the woods?

September 23rd was the day we used up all the resources that nature will generate for this year. Around the same time, the media proclaimed a crisis in the global economy. Are the two headlines connected? There are many complex parallels but what is certain is that with 50% of the world's population living in cities, we could say that the future is urban.

On the one hand, our cities have the highest concentration of consumption, buildings, traffic, crime, pollution and waste production per square metre, but on the other hand, they are characterised by a level of density and intensity that engenders shared knowledge, culture and creativity.

"Imagine my city with flying vehicles, portable parks, and water will be supplied by robots. I will be an astronaut and I'll fly to the moon and work in tourism in outer space", Juan Manuel, 8 years old, Bogotá.

Firstly, who better than children to design the drastic changes that have to be made in the city? If the city is a good place to be through the eyes of a child (they can play in the street, meet friends, move around freely, climb trees and, why not, daydream and see dragons in the streets...), it will be a good place for us all. Who wouldn't want safe streets, efficient and accessible public transport, green areas and open spaces? Giving children a voice and a vote in city planning is a good step forward. In this issue of the magazine we focus on other ways that young people can transform their cities; take eco-safaris, green guerrilla teams and urban biodiversity mappers, as just some examples.

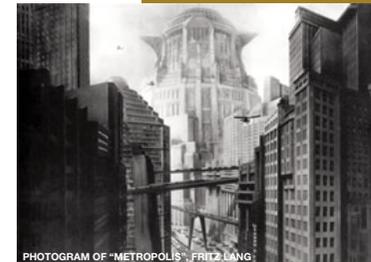
If we also look at the poorest cities in the world, where the urbanization process is happening at a faster pace and in many cases is out of control, can we sit back and relax, believing that we have the educational resources needed to deal with these urban realities? Do we know enough about sustainable urban development, the right to housing, risk management, community self-sufficiency, urban governance and connections between the rural

economy and the city? Why not prioritise these matters in the education of the entrepreneurs, engineers and politicians of the future?

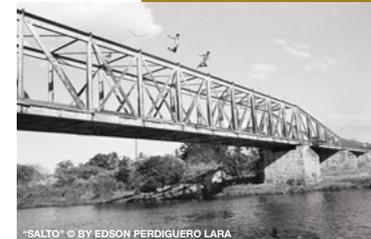
Looking to the future, and on a more positive note, what do Frieberg (Germany), Dongtan (China) and Portland (Oregon, USA) have in common? They all appear in different lists of the world's "top eco-cities", but there are so many ways of measuring sustainability and so much "talk", that we now need to be a little more wary of the claims to be the most sustainable city, and know how to wean out the genuine "eco" from the future "city".

At the time of publishing this issue, over 12,000 world leaders and experts are meeting in China at the fourth session of the World Urban Forum to discuss urbanization and its impact. Will they talk about the role of education? Let's hope so! Meanwhile, we present an array of ideas and resources for teachers and educators in the frontline of our urban future.

Heloise Buckland



PHOTOGRAPH OF "METROPOLIS" - FRITZ LANG



"SALTO" © BY EDSON PERDIGUER LARA

The graphic work on the front cover "**Abandono de la distopia**" (*abandoning the dystopia*) is a composition made from two photos:

"**Salto**" (jump) was taken in Bahia Rio Paraguaçu (Brazil), by Edson, a photographer and idealist, who has travelled over 10 thousand kilometres on a second-hand bike. I met him at a permaculture fair in Portugal.

The second, the skyline of a futuristic city, is from a classic science fiction film ("**Metropolis**", Fritz Lang, 1927); the scene is dominated by the New Tower of Babel, symbol of the panoptic power of capitalism which finally succumbs to the rebel workers.

alexis urusoff ramos



The city of children
is a sustainable city

“It’s all the grownups’ fault”

In the light of the serious problems of environmental sustainability and social degradation, ecologists, sociologists, psychologists and doctors are calling for urgent changes to make our cities habitable again. When working with children, it is surprising to discover that the city that they ask for and need is very similar to the city that experts on the subject describe.

Furthermore, the city that they propose strongly resembles ancient cities. When asked how he imagined the city of the future, the acclaimed Italian architect Renzo Piano replied: “As similar as possible to that of the past”. It isn’t about being romantic or nostalgic, but rather it’s about reclaiming the role of public places in the city, their function as a place for meeting and exchange, a place to express diversity that has gradually been lost up to the present day. The Renaissance city was dreamt up as an alternative to the medieval model of the castle, based on the principle of separation: the powerful and wealthy feudal lords lived within the castle walls, and outside the walls was the village of the serfs and the peasants at the service of the powerful. The city broke with this way of thinking and was built around a main square, a symbol of public space. The governmental palace and cathedral were in this square, and the mar-

ket was also brought to life here, a symbol of exchange and interaction. The historical city did not have areas separated by different social classes. Its streets were attractive as they were made up of the fine mansions of the nobles, built by great architects, and the humble houses of the artisans. Diversity enriched the city and made it pleasing to the eye. This is the same as ecosystems: an ecosystem will be healthy and full of life if it is complex and joined-up, if each of its parts interacts with others. For some decades since the Second World War, cities have managed to sell their own character down the river by adopting a model of separation and speciali-

sation. The historical city centres have become depopulated, suburbs have emerged, neighbourhoods have been created for rich and poor, dormitory towns, cultural areas, working areas... In this modern city, thought out for adult male workers, the car has become king. Cars have caused



DRAWING FROM THE UROQU-MARU CRAFT WORKSHOP VENEZUELA - FELIPE GARCIA

Francesco Tonucci
Director of the
International Project of
the Italian National
Research Council
Institute of Cognitive
Sciences and
Technologies





A thousand young leaders



for the capital

PERIFERIA BOGOTÁ • © CARLOS FERNANDO CASTELLANOS NEIRA

The National Programme of Community Environment Promotion devised by Colombia's Ministry of the Environment, Housing and Territorial Development has trained around 6,000 community leaders since 2003. These individuals are seen as generators and promoters of processes that promote citizen participation through the "Young Environmentalists" project in the city of Bogotá.

The aim of the proposal is to train 1,000 young leaders distributed throughout the different areas of the capital. The project is run based on the activities of three ministries: Interior and Justice, Social Protection through the National Learning Service and the Environment offering operational support to enable people to attend the training course.

The project has two facets. Firstly, it creates a tool that

trains leaders who promote citizen participation, social control and school and citizens' environmental projects. Secondly, young people are given the opportunity to attend **free quality training that will turn them into community leaders with specific skills** such as the ability to assess the environment, design proposals and run projects. "Young environmentalists" is aimed at teenagers and young people from 15 and 26 years old, with a planned total duration of 240 hours (120 for study in the classroom and 120 for fieldwork) to be carried out over 20 weekly meetings. At the end of the Bogotá experiment the results generated will be systematised and evaluated with the intention of repeating the project in other cities.

Bogotá, Colombia
 ☎ (+571) 3323603 (1601)
www.minambiente.gov.co

Mediterranean cities cluster together

www.medicities.org

Medcities is a network of Mediterranean coastal cities created in Barcelona in 1991 at the initiative of the Mediterranean Technical Assistance Programme (METAP), which in turn was established by the World Bank, the European Investment Bank, the European Commission and the United Nations Development Programme. Medcities provides technical advice and strengthens decentralised activities, raising awareness of urban environmental problems, especially in southern countries. Medcities' networking is a tool used to strengthen management capacity in relation to sustainable development in lo-



cal administrations, identifying in which areas it is most appropriate to improve regional environmental conditions.

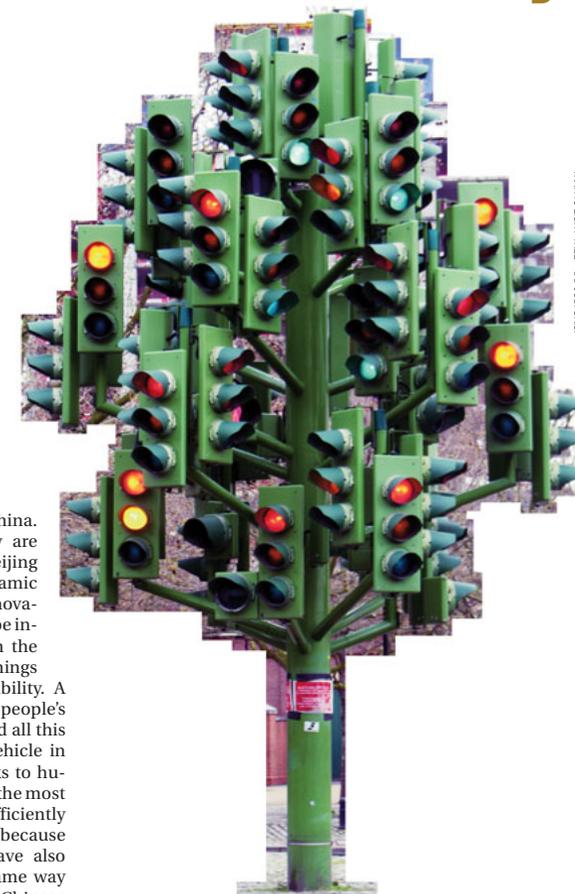
The main aims of this city network are to build awareness of interdependence and shared responsibility on urban environmental policies in the Mediterranean, reinforce the technical, financial and institutional role and training of councils in the implementation of local sustainable development policies, develop the awareness and participation of citizens and consumers, and establish direct cooperation policies for the twinning of coastal Mediterranean cities.

Branding vs sustainable cities

Competing for number 1 eco-city?

The most sustainable city, the most economical car, the most efficient fridge... Excellence in the field of sustainability is a prized marketing value. What's the point for teachers?

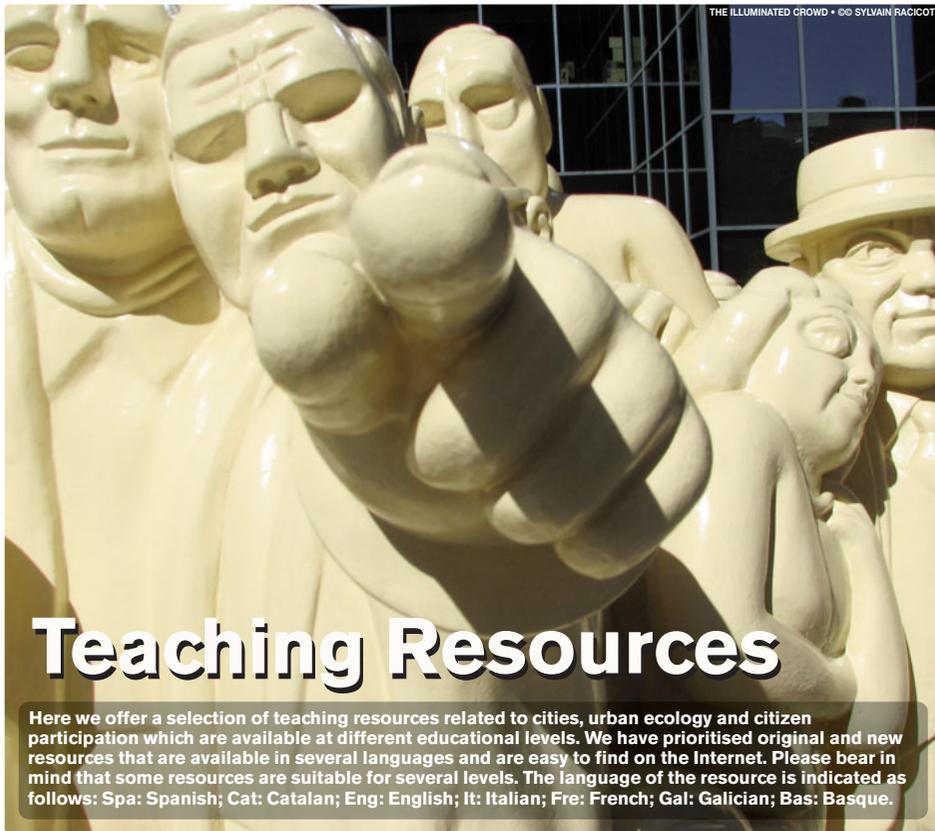
The press agencies serve up this type of news with a somewhat mundane frequency. I have just read, for example, a recent news item from China. Today, a day like any other, they are studying turning a rural area near Beijing into the first eco-city in this vast, dynamic country. The article explains the innovations and improvements that are to be introduced and which will transform the place into a paradigm of doing things well... Quite a symbol of sustainability. A tram system will be used to reduce people's dependence on private vehicles, and all this so soon after the typical private vehicle in China moved on two wheels, thanks to human traction! China, then, will have the most sustainable city. This would be a sufficiently interesting title in itself if it were not because over recent months the media have also hyped up other examples in the same way that they talk about the case of this Chinese city. Masdar, in Abu Dhabi, is a particularly eccentric case as it is in the middle of the desert and is being promoted by one of the main oil producers. There is also the credible case of Freiburg in Germany, or Portland in the USA, which has been chosen as the most sustainable city in the country that has the well-deserved title of "the world's most wasteful country".



TRAFFIC LIGHT TREE • © JOJO CRISP

The phenomenon of lists is not just found in the case of cities. Let's have a look at advertising. The car with lowest emissions, we read in the advert on page 7, and on page 19 we find another vehicle that claims its slice of environmental commitment. Efficiency is now stressed as a selling point in some white goods shops. Our trusted salesman can look us in the eye, without blinking, presenting

Oriol Lladó
 Environmental journalist
www.oriollado.cat



THE ILLUMINATED CROWD • © SYLVAIN RACICOT

Teaching Resources

Here we offer a selection of teaching resources related to cities, urban ecology and citizen participation which are available at different educational levels. We have prioritised original and new resources that are available in several languages and are easy to find on the Internet. Please bear in mind that some resources are suitable for several levels. The language of the resource is indicated as follows: Spa: Spanish; Cat: Catalan; Eng: English; It: Italian; Fre: French; Gal: Galician; Bas: Basque.

INFANT AND PRIMARY EDUCATION

PUBLICATIONS

La ciutat

An interactive book that helps identify the different aspects of the city: physical (a square, the underground), social (ways of living and working), historical and functional (mobility, water pipes, etc.). From the age of 5.

Anne Royer. Editorial Cruïlla, 2007

www.cruilla.cat (Spa, Cat, Fre)

Quando los niños dicen ¡Basta!

The author gives children the right to speak, and through the use of 26 phrases brings together their protests and proposals. The book sets out the importance of listening to children and of being prepared to defend their positions and needs.

Francesco Tonucci. Germán Sánchez Ruipérez Foundation, 2003

www.fundaciongsr.es (Spa, Cat, Eng, It)

Big City Pack

This pack (a book and poster) focuses on four cities: Glasgow, Phnom Penh, Santiago and Dakar. The activities invite pupils to relate their knowledge of their city with the rest of the world. It explores topics such as markets and shopping centres, transport and leisure.

Oxfam, 1994.

publications.oxfam.org.uk (Eng)

Children's participation in sustainable development

A manual which contains participative principles and methods to get children involved in environmental and community development projects. Some of the experiences presented refer to planning, design and the construction of spaces and facilities.

Roger A. Hart. Barcelona: PA.Uno. Education, 2001

www.paueducation.com (Spa, Eng)

MULTIMEDIA AND WEBSITES

Electricity

A simulation game similar to SimCity where children can test out their skills in running a town. They have to get energy, water and other resources for the citizens, as well as planting and cutting down trees, and need to adapt to climatic variations. Includes a teachers' guide.

<http://electricity.co.nz> (Eng)

Child Friendly Cities - UNICEF

The UNICEF Child Friendly Cities programme aims to promote and foster the application of the Convention on the Rights of the Child within local organisations. It includes an Expert Forum, as well as a library specialising in childhood and local government.

www.childfriendlycities.org (Spa, Eng)

Greener Futures

An interactive website that covers different areas such as waste, water, energy, nutrition, transport and biodiversity in the urban environment, and offers surveys, data-analysis tools, games and puzzles that help build these topics into classic school subjects like science, geography and citizenship.

www.greenerfutures.com (Eng)

Create your future

A website for children, designed to make them think about and plan a sustainable future. It offers news, stories and other educational resources.

Published by the NGO Japan for Sustainability.

www.kidsforfuture.net (Eng)

Teach Sustainability

This website is a resource sharing database to support teachers exploring sustainability issues in their classrooms. This database allows open and free sharing of resources that have been developed or sourced by school teachers and educators.

www.teachustainability.com.au (Eng)

Adventures with Bobbie Bigfoot

This website provides an interactive quiz to help kids understand how food choices, transportation choices and more affect a person's ecological footprint.

www.kidsfootprint.org (Eng)

Ecokids

EcoKids is Earth Day Canada's environmental website for kids. It features online games, links for homework help and contests, as well as printable resources for parents and teachers.

www.ecokids.ca (Eng)

Oxfam Resources

The website of the Oxfam organization provides various resources for teachers, journalists, researchers and policy-makers among others that are useful for classes. Citizenship, commerce and social aspects are worked on using their publications and resources in general.

www.oxfam.org.uk (Eng)

SECONDARY EDUCATION

PUBLICATIONS

Saving Energy

The Alliance to Save Energy offers educators a wide range of tools and resources to bring energy efficiency into the classroom to save energy while helping students build vital real-world skills.

www.ase.org (Eng)

Radio for change

This CD-Rom contains ready to use classroom activities on the 8 key concepts of the global dimension - human rights, sustainability, conflict resolution, values and perceptions, social justice, interdependence, diversity and global citizenship. Includes worksheets, role plays, songs, quizzes and links to websites for further work.

Global Link.

www.globallink.org.uk (Eng)

Wall to wall design

This pack examines the design and construction of sustainable homes. It is intended to help students to consider sustainable issues as part of Design and Technology. There are two detailed case studies: one of Masai homes in Kenya and one of a housing scheme in the UK.

Practical Action Publishing.

www.developmentbookshop.com (Eng)

Imaginative Leaps: Creative arts and sustainable development

This booklet, published by the Development Education Centre South Yorkshire (UK), is aimed at school, youth and community arts groups, and outlines ways in which issues of sustainable development can be used as stimuli for creative work in art, drama, dance, music or design.

DEC(SY), 1995

www.decsy.org.uk (Eng)

This city life: Street Children Around the World

This pack, with a video and activity books, was developed to promote understanding and discussion of why young people in three different cities have chosen to live on the streets.

Leeds Development Education Centre, 1999

www.leedsdec.org.uk (Eng)

MULTIMEDIA

SimCity

Electronic simulation game on the creation and running of a city. From the age of 14.

www.simcity.ea.com (Spa, Fre, It, Eng)



La ciudad conquistada

Jordi Borja
Alianza Editorial (2003). Cat, Spa.
 Jordi Borja suggests different forms, strategies and critical debates for urban intervention and innova-

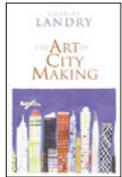
tion within a global dimension and not as a mosaic of dissociated spaces. He tackles the most profound sociological and political aspects: the city with its fears and fractures, but also with its challenges and the responses made to them. Likewise he sets out present and future options for citizenship within a globalised world, the needs of political innovation and our possible horizon of rights. The conquered city is not an object but rather an objective.



Sociedades movедizas
Pasos hacia una antropología de las calles

Manuel Delgado
Editorial Anagrama (2007). Spa.

Continuing with the deep immersion into the study of public spaces started by *El Animal Público* and *Sociedades Movедizas*, Manuel Delgado re-enters his research into the urban landscape. The author distinguishes between city and urban aspects, with "urban" being understood as everything that cannot be brought to a halt in the city, that which is viscous; the urban way of life is marked by the proliferation of precarious, unstable, lax and unstructured relationships.



The Art of City Making

Charles Landry
Earthscan (2006). Eng.

City-making is an art, not a formula. The skills required to re-entrench the city are far wider than the conventional ones like architecture, engineering and land-use planning. Following the widespread success of *The creative city*, this new book, aided by international case studies, explains how to reassess urban potential to adapt to the changing global terms of trade and mass migration.



A Convenient Truth: Urban Solutions from Curitiba, Brazil

Maria Vaz Photography, Del Bello Pictures
52 minutes (2007). Eng, Port.

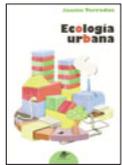
This is an informative and inspirational documentary which focuses on innovation in transportation, recycling, social benefits, affordable housing, seasonal parks and other processes that transformed Curitiba into one of the most liveable cities in the world.



Manufactured Landscapes

Jennifer Baichwal, Zeitgeist Films
90 min. (2007). Eng, Port.

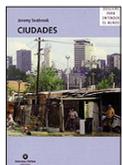
This film follows the photographer Edward Burtynsky on his journey through the urban landscapes of China. His photographs of factories, mines, quarries and dams make an art form out of the materials that we consume and their waste products. The film documents China's massive industrial revolution and invites us to meditate on our impact on the planet and witness both the epicentres of industrial endeavour and its waste.



Ecología urbana

Jaume Terradas
Rubes Editorial (2001). Cat, Spa.

Urban ecology considers that the city is a living environment and is as such an ecosystem in itself. The book therefore looks at the urban phenomenon from a scientific perspective, focusing on the study of the processes and flows that hold together the city's metabolism. Lastly, the author explains the foundations that the city of the future will be built upon and formulates the ecological criteria for the management of major cities.



Cities

Jeremy Seabrook
Intermón Oxfam Edicions (2007) Cat, Spa, Eng.

Jeremy Seabrook opens our eyes to reality, to the time bomb that is ticking in the major cities of poor countries: Karachi, Cairo, Nairobi, Jakarta, São Paulo, Caracas, Lagos and Lima. The author combines portraits of urban life with a wider analysis of contemporary global capitalism.



En construcción

José Luis Guerín
125 minutes (2001). Spanish.
 The story of the transformation of the red light district of Barcelona, threatened by a refurbishment plan; an apartment block starts to be built. After three years of filming and the construction of the building, José Luis Guerín shows us how the mutation of the urban landscape also involves the mutation of the human landscape.

Ecological footprint

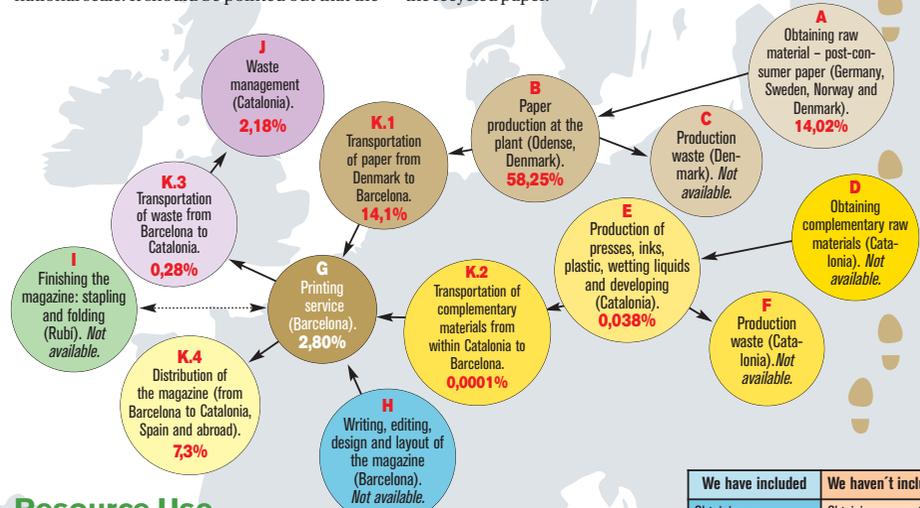
The ecological footprint is an environmental indicator that is defined as the area of ecologically productive land (fields, meadows, forests or aquatic ecosystems) needed to generate the resources used and to assimilate the waste and emissions produced by a certain product, service and/or population. The ecological footprint is expressed in hectares or any other indicator of surface.

We are attempting to improve the process used to come up with a more precise and up-to-date calculation of the footprint for each issue of the magazine. This process is constantly under construction and this time we have taken a total of 14 processes into account (see diagram). The final result is **6.48 m2 per copy** and a total of **25,934 m2 for the total 4,000 copies** of this issue.

Distribution of the ecological footprint

The following diagram shows the distribution of this magazine's ecological footprint with geographical references, from the processing of recycled fibres to obtain the paper to the magazine's distribution and waste management on a national scale. It should be pointed out that the

printing process only takes up 2.8% of the associated footprint (this is done in Barcelona). We can therefore see that the main proportion of the impact generated by the magazine corresponds to the place of origin and processing of the recycled paper.



Resource Use

Total calculation for all copies

Nº	Copies	Pages	Footprint (m²)	Waste (kg)	Water (litres)	Electricidad (kWh)	Emissions (kg CO ₂)	Raw materials (kg)
1	2000	48	10.664,00	100,70	3.944,11	1.751,87	786,55	559,64
2	3000	56	19.503,00	168,62	6.864,4	3.048,98	1.357,14	974,00
3	4000	54	25.934,00	214,49	8.836,46	3.924,92	1.742,46	1.253,82

Calculation for each copy

Nº	Copies	Pages	Footprint (m²)	Waste (kg)	Water (litres)	Electricity (kWh)	Emissions (kg CO ₂)	Raw materials (kg)
1	2000	48	5,332	0,050	1,890	0,840	0,380	0,27982
2	3000	56	6,501	0,056	1,972	0,876	0,452	0,325
3	4000	54	6,484	0,054	2,209	0,981	0,436	0,313
4	4000	54	6,484	0,054	2,209	0,981	0,436	0,313

If you wish to make any comments or suggestions, or would like to get involved with the magazine, please contact us at ee@rce-barcelona.net

We have included	We haven't included
Obtaining raw material (cellulose) and recycling	Obtaining raw material for complementary products (ink, etc.)
Paper production	Editing, translation, linguistic correction
Production of ink, printing presses, cloths and wetting liquids	Design and layout
Printing and binding	Waste water produced during the production cycle
Transportation of raw materials, waste and the final product.	

Sources: El Tinter, S.A.L; Ecological Footprint Network - Canada; IDESCAT; Digital footprint of EUPM; University of Massachusetts Amherst, USA; The Paper Research Industry Association; Dalum Papir A/S Denmark; Ljubljana Digital Media Lab-Croatia; KHT Institution for Energiteknik, Sweden; ECODESIGN Company, Engineering and Management Consultancy GMBH; Ferey, Guillaume.

Consultancy: Jaume Enciso, environmental consultant