

Dear reader,

The current issue of "Green Roofs News" will feature a specific topic "Green Roofs on Medical Facilities". Case studies from Germany, Austria, Spain and the UK show how to create a roof garden which suits the individual needs of both patients and hospital staff. This special field of application is one more proof that Green Roof technology can open new spaces and make the most out of a building – for the benefit of humans and the environment. Further articles address the amazing success story of Green Roofs in Stuttgart/Germany, and the winner of the IGRA Green Roof Leadership Award 2011. And we will report on the upcoming Green Roof Conferences in Copenhagen (Denmark), Hamburg (Germany) and the Roof India Exhibition 2012. As you can see, there are lots of opportunities to meet and network with colleagues from around the world.

Have fun reading!

Wolfgang Ansel
Director IGRA

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Green Roofs on Medical Facilities: International Case Studies

Apart from pure medical and social care, connecting with nature can play a very important role in the recovery process of patients in hospitals. Nevertheless ambitious green concepts in hospitals are still scarce. Very often hospital architects simply do not see enough free space in their plans to incorporate nature in the middle of their high-tech medical buildings. A bird's eye view, however, shows enormous potential on the roof areas of the hospital buildings. Examples from Germany, Austria, Spain and the UK give an impression of the diversity of uses and of specific design options.

Civil Hospital Frankfurt (Germany) – Roof Garden for the Maternity Unit

Due to the lack of parks and green spaces in the surrounding area, the 750 m² roof garden of the civil hospital in Frankfurt/Germany offers a rare chance for patients to get away from the sterile hospital atmosphere. At the same time, the roof garden with its benches, sandstone walls and arches acts as a meeting place and a place of communication. In particular, patients in the nearby maternity unit gladly avail of the opportunity to meet with other mothers to talk and to find some relaxation and recreation with their newborns in a natural setting.



Roof Garden for the Maternity Unit in Frankfurt

A species-rich vegetation of herbs and roses were placed in raised beds to allow patients to really appreciate the plants with all their senses. Small trees and shrubs complement the ambitious vegetation design. In 2008 the decision to increase the number of floors in the building wing which carries the roof garden led to major renovations. However, the hospital management stuck to its philosophy and installed the roof garden a second time, two floors above.

Robert Bosch Hospital Stuttgart (Germany) – Roof Garden for Radiotherapy Patients

The roof garden at the Department of Radiology and Nuclear Medicine at the Robert Bosch Hospital in Stuttgart/Germany is tailored for a particular clinical treatment. Patients undergoing radioiodine therapy for differentiated thyroid cancer must remain isolated until the radioiodine concentration levels have dropped. The treatment is a test of patience for the patients because no visitors are allowed during their stay and they cannot move freely within the hospital. In order to make the isolation period (approx. 4–6 days) more bearable, the patients have access to a spacious 1,500 m² roof garden on top of the department. The vegetation has been designed by colour and structure. In addition to ground covering herbs, a variety of grasses and smaller trees have been used.



Roof Garden for Radiotherapy Patients in Stuttgart, Copyright Peter Walser

Emphasis was placed on ensuring that the flowering period of the plants mirrors the different seasons of the year. The concept of green roofs at the Robert Bosch Hospital is not, however, limited to the Department of Radiology and Nuclear Medicine. Two more roof gardens covering an area of more than 2,500 m² invite other patients to enjoy a natural environment.

Ronald McDonald House Essen (Germany) – Hundertwasser Architecture gives Families Strength



Ronald McDonald House Essen, Copyright Gruen + Dach

The Gruga Park in Essen/Germany is home to a unique gem – The Ronald McDonald Hundertwasser House. The building which is owned by the Ronald McDonald House Charities offers families whose seriously ill children are being treated in the neighbouring University Hospital Essen an oasis of calm in order to gather strength for the strenuous clinic schedule. The famous Austrian artist Friedensreich Hundertwasser's last draft was inspired by a "volcano crater" and a "protecting den". Since Hundertwasser was one of the major advocates and pioneers of natural and human-oriented architecture, it is no wonder that the roof of the building was designed as a roof garden. The planning and execution of the diverse roof garden was a special challenge for landscape contractor Jürgen Quindeau (Grün + Dach, Heiligenhaus). After all, the design was far from being traditional flat roof hospital architecture. The roof garden rises from ground level up to a height of 15 meters and is 8 to 9 meters wide. The roof pitches are up to 35°, the upper limits for green roofs. To compensate for the shear forces, special drainage elements, anti erosion nets and shear barriers were used. The planting of grasses, shrubs and 50 trees (including maple, mountain ash, hornbeam, lime and various fruit trees) has provided a colourful mixed orchard which gives guests an intensive experience of nature.



Garden for Dementia Patients, Vienna, Copyright Caritas Socialis

Care and Social Centre Vienna (Austria) – Garden for Dementia Patients

The roof gardens and roof terraces of the social centre of the Caritas Socialis in Vienna/Austria were developed to meet the needs of older people with Dementia/Alzheimer's disease. Plants in flowerbeds at different heights allow both pedestrians and wheelchair users direct contact with nature. The special flower and herb arrangements created by the University of Agricultural Sciences, Vienna invite touching, smelling and observing which simultaneously stimulates the visitor's memory. In addition, regular maintenance and planting work has been incorporated into patient therapy as part of an extensive activation and treatment programme. Since people with Alzheimer's disease often show a very strong urge to move, an "endless" figure-of-eight looped path was installed on the roof.

Being out in fresh air is an important measure for relieving tension, frustration and aggression and thereby reduces the use of medication. Of course, the roof gardens are also open to the patient's visitors. Being able to meet outside of the cramped ward in a natural environment has a positive effect on the duration and the frequency of visits. If the weather permits birthdays, barbecues, summer parties and other social events may take place on the roof garden.

Infanta Leonor Hospital, Madrid (Spain): Improved Energy Efficiency through Green Roofing

Three main points had to be taken into consideration when the Infanta Leonor Hospital (UTE Hospital Vallecas), which serve some 300,000 inhabitants of south west Madrid, was being designed. Apart from providing flexibility in the design which would allow room for later extension work, the creation of a natural, recovery aiding environment as well as aspects of energy efficiency needed to be taken into account. For all points the contract architects, Vidal y Arquitectos asociados + Araujo-Berned Arquitectos made use of the roof surfaces. This led to extensive green roof areas (6,500 m²) being planted with access for both personnel and patients, inviting them to walk. The multilayered Green Roof system which the Green Roof installer Aimad S.L. applied made a free combination of paths and planted sections possible.

Potential energy saving possibilities through the use of sunlight, solar energy, insulation and heat recovery were also taken on board during the building design. The main goal was to plan a building which, on the one hand, allowed lots of sunlight in – which would bring energy saving costs of about 280 kW/h alone – and on the other hand, would not overheat. The arrangement of the pavilions makes maximum use of solar radiation for the building services while various facade structural elements keep unwanted heat in check. Individual roof sections are also installed with solar heating systems to heat water.



Infanta Leonor Hospital, Madrid (Spain), Copyright VICOM

A further planning point was the creation of a pleasant micro climate through the use of vegetation. The plants work as heat buffers, they reflect solar radiation and they create evaporation. This can sink outside temperatures naturally by 3 to 4 °C in the summer. In the winter, however, the improved roof insulation reduces the need to heat. Water retention on the green roofs has meant that smaller drain pipes could be used. This example demonstrates the manifold synergy effects of combining modern building services engineering with green roofing wonderfully.

Oak and Beech Units in Harperbury (UK) – Award Winning Healthcare Project

The Oak and Beech units at Harperbury were built within a green belt environment, to a design by Dransfield Owens De Silva Architects. The project has since gone on to win a prestigious Building Better Healthcare Award for Best Mental Health Design. Planted courtyards and green roof areas were incorporated into the design after service-users and staff identified the therapeutic qualities of green outside space. The sloping green roofs were installed by Letchworth Roofing, over a layout of complex levels around the courtyards, ensuring the green sedum aspects were visible from ground level. With their relatively shallow substrate, extensive green roofs are ideal for lightweight decks, inaccessible roofs and flat or sloping roof areas. Their versatile and economic design provides a "back to nature" solution offering strong ecological benefits, perfectly suited to the site's green-belt location. The roofs at Harperbury support self-sustaining sedum plants that require minimal irrigation and are highly wind, frost and drought resistant. IGRA member Alumasc provides a wide range of green roof solutions from extensive to intensive roofs. All offer notable environmental benefits, providing a natural habitat for plants and wildlife, while helping to reduce air and

noise pollution, cutting carbon emissions and assisting with rainwater retention and attenuation.

Design Criteria for Roof Gardens at Medical Facilities

Nowadays almost any building can be landscaped with modern green roof technology. The fields of application range from extensive green roofs that serve as ecological compensation areas for plants and animals to roof gardens with integrated paths, seats, play areas and ponds. While extensive green roofs only need to meet normal technical standards, roof gardens on medical facilities require comprehensive planning processes and the involvement of medical professionals. Special features include barrier-free access, handrails along the pathways and a simple routing within the gardens as well as the perfect blend of retreat areas and places for community activities. Some parts of the garden must offer protection from sun and wind throughout the year. The plant selection should provide a varied mix of colours, shapes and scents that stimulate all the senses. The gardens should create a motivating environment that encourages the self healing powers of the patients and also allows them to focus on something other than their illness.

When direct contact with nature leads to lower medical treatment costs, the additional investment for the installation and maintenance of roof gardens will pay off quickly. Other advantages include reduced building operating costs through the insulating and heat absorbing effects and the protection of the roof membrane by the vegetation layer. And we mustn't forget the environmental benefits of the new habitat for plants and animals and the positive impact of green areas on the urban climate. A classic win-win situation for all involved.

Wolfgang Ansel



Extensive Green Roof, Harperbury, Copyright Alumasc

A Mediterranean Green Roof: Carrefour Supermarket in Athens

The idea of Green Roofs has been spreading in Greece over the last decade. Architects, landscape architects, horticulturalists and engineers are aware of the updated technological solutions concerning green infrastructures and promote the idea of Green Roofs as a solution, not only to increase the thermal insulating value of the building, but also to create roof landscapes and extend the building's usable area, to improve air quality and to create a natural microclimate in the urban environment.

The Carrefour Supermarket building was constructed in 2009 in Halandri/Athens. G. Lamprou, the architect, decided to enhance the building's bioclimatic architecture by installing an extensive Green Roof. The Green Roof was designed according to FLL Guidelines with adequate measures for Mediterranean climatic conditions. The Green Roof system build up using a variety of plants such as *Lavandula dentata*, *Teucrium marum* and *Origanum heracliotium* covered approximately 90 % of the roof area. Creating the Green Roof also improved views for occupants of surrounding buildings and also improved the building's energy conservation. The supermarket's Green Roof system was selected to provide a growing environment as close as possible to the plants natural environment.

It was necessary to install an automatic drip irrigation system in order to provide adequate water during the summer periods when temperatures are high, humidity is low and there is little or no rain in Attica. The irrigation serves several cooling functions, on the one hand for the plants, and on the other as an additional air cooling system.

The Green Roof with Mediterranean plant species creates a sustainable green habitat and enhances the building's energy efficiency. Green Roofs can play a key role in sustainable urban planning. Green Roof "protection" not only reduces maintenance and renovation of waterproofing material costs, but also conserves energy. Heating and cooling energy savings based on the latest technological developments in Green Roofs have multiple effects: they reduce costs and protect the environment.

Grigoris Kotopoulos
egreen, Athens



National Archives Copenhagen: Green Roof receives Beautification Award

The Society for the Beautification of the Capital – FHF (Foreningen Hovedstadens Forskønnelse) is an active forum in the modern metropolis of Copenhagen and an association with old and proud traditions. The society has been helping to make Copenhagen a more beautiful city for 126 years. This is done largely by supporting and providing inspiration for high quality architectural and urban related projects and by honouring exemplary buildings or initiatives with the FHF award and a brass plaque.

The goal to make Copenhagen a good city to live in, work in, do business in or just to visit, is reflected in the city's atmosphere, its environment and art, its infrastructure and its social conditions. FHF has therefore selected five priority areas for the coming years: architecture, art, environment, social initiatives and infrastructure.



The green corridor is framed by the building wings.

As far as the environment is concerned, the society wants to inspire and support environmental initiatives in Copenhagen, demonstrating that environmental sustainability has a social dimension and is democratic in its essence. No city can survive as an isolated entity, cut off from the rest of the world. Climate challenges affect everyone. FHF therefore wants to deal with common problems actively and wants to create solutions together with the relevant stakeholders. Given this background it is not surprising that a green roof project is among the winners of the FHF Awards 2011.

The Rigsarkivet (National Archives) green roof is part of a botanical green corridor that connects Bernstorffsgade in the north with the Tivoli Hotel and Convention Centre in the south. The 7,200 m² green roof is open to the public and serves as a green street for pedestrians and cyclists. With a large variety of plants, grass surfaces, mixed beds, strawberry bowls and flowering trellises, the project is a uniquely beautiful and well researched example of how a green roof can be created as a part of modern urban architecture. The park, together with the walls of the surrounding buildings, mirrors a mosaic of angular shapes. Several gravel paths cross the central asphalt strip, contributing to the lines and angles that form the whole.

Schönheer Landscape Architects demonstrated the value of a green roof to a building, and also to a whole city, in an exemplary way by creating such a uniquely beautiful park on the roof of the National Archives. The installation was quite challenging. It required creative thinking on the part of the landscape contractor, P. Malmos A/S, and a lot of hard work to build a park 10 meters above street level in between the two wings of the National Archives. Because the maximum load of the roof is only 500 kg/m² standard landscape machinery (e.g. wheel loaders) could not be used to transport materials on the roof. All materials (a total of 3,000 tonnes) were loaded on to the roof via a crane truck at one end of the green corridor and then distributed, either with motorized wheelbarrows or by hand. However, the result was worth all the effort. The green roof solution meets all the demands of current and future construction: the need for multiple purpose use of space in an increasingly dense city, the need for sustainable stormwater management, and the need for biodiversity.



Motorized wheelbarrows makes it easier to transport the substrate on the roof.



Ground-nesting birds use the green roof.

Green Roof Policies in Stuttgart/ Germany: The Success Story Continues

With more than 2 million m² of Green Roofs and landscaped underground garages Stuttgart is one of the leading Green Roof cities in the world. The following article describes the history and future of Green Roof Policies in Stuttgart.

Stuttgart is a metropolitan city with 600,000 inhabitants and is the center of a region with 2.6 million inhabitants. It is the capital of the federal state of Baden-Wuerttemberg, situated in the southwest of Germany. Stuttgart is not only a "City between vine and forest" but also a well-known industrial and high-tech location, in particular for the automobile industry. Famous companies such as Daimler, Porsche and Bosch have their headquarters in Stuttgart.

Due to its special "basin" topography, its high degree of soil sealing and low wind speeds Stuttgart's urban climate is very sensitive to the effects of heat, air pollution and flooding. Vegetated areas could mitigate the climate deficits. But on ground level there is strong competition between development areas for housing/industry and urban green spaces. It's no wonder that decades ago the local urban planners developed a Green Roof strategy to transfer the roof surfaces into environmental protection areas.

Since 1977, when in Stuttgart took place the Federal Horticultural Exhibition, the city of Stuttgart has been doing pioneering work in promoting green roofs in Germany. A broad range of different instruments was introduced in the mid-eighties (e.g. stipulations in local development plans, direct financial support, landscaping of municipal buildings, green roof awards) to establish green roofs in urban development. In 2007 another instrument was added, in terms of indirect financial incentives through reduced stormwater fees for sealed surfaces.



The Green Roofs on top of the student hostel in Stuttgart-Hohenheim were constructed in 1985

Regulations for Green Roofs in the Development Plan: In Stuttgart, Green Roofs have been regulated in development plans for more than 30 years. The German Federal Building Code and Baden-Wuerttemberg building regulations form the legal basis for the designations. But in order to make Green Roofs happen it was very important that the administration and the city council acted in concert and agreed on the ecological and economic benefits of green roofs. Albert Ackermann, former director of the town planning department and enthusiastic Green Roof advocate, played a key role in this process. At the beginning the Green Roof regulations mainly covered new residential areas. Later the designations were extended to industrial/commercial areas. In northwest Stuttgart, for example, flat roof landscaping and a considerable total greening of the 24-hectare large "Weilerpark" industrial estate had been prescribed compulsory.

Today the following regulations are to be found in almost every new development plan: "Flat roofs (0 to 15 degrees inclination) are to be planted over a proportion of at least 60% of the roof surface – with the exception of surfaces for technical roof systems – with a substrate layer of at least 10 cm of grasses, soil-covering plants, and wild herbs, and are to be maintained so.



Green Roofs – as far as the eye can see

Over the years this policy has achieved very impressive results. One of the most outstanding examples is the car company Daimler AG. According to their environmental report, the Green Roofs on the different buildings of the production facility in Stuttgart add up to an incredible 152,000 m².

Landscaping of Municipal Buildings: Statistics on the number of Green Roofs created on city buildings in Stuttgart show that between the years of 1986 and 2008 approximately 120,000 m² were landscaped: 88,000 m² with extensive Green Roofs and 32,000 m² with intensive Green Roofs.



Green Roof on top the Garden Department – the city sets a good example

Direct Financial Incentives: A valuable addition to the regulations in development plans are the direct financial incentives for Green Roofs that are built on a voluntary basis. Between 1986 and 2008 approximately 1.100,000 € was provided for the support of 415 private Green Roof projects. 51,000 € was set aside each year in the annual budget and a Green Roof area of 62,000 m² – extensive and intensive – could be gained. Due to the financial crisis the program was suspended in 2009. However, a relaunch is currently under discussion.

Reduced Stormwater Fees for Green Roofs: In Stuttgart, the rainwater-tax for sealed surfaces is 0.65 € per m² and year. For green roofs with a substrate layer of at least 60 mm, the tax is reduced by 50 %.



Stormwater management with Green Roofs in Stuttgart-Zuffenhausen

The reduced stormwater tax is therefore a very important tool in supporting sustainable stormwater technologies. A comparison of investment costs for conventional stormwater management vs. sustainable stormwater management for a 16.7 ha development site in Stuttgart-Zuffenhausen is described in the book "Green Roofs – Bringing Nature Back to Town" (www.igra-world.com/green_roof_literature/index.php).

Summary: Although Stuttgart has already created a large number of Green Roofs and landscaped underground garages (2.2 million m²), the city is very keen to carry on supporting this process in the years to come. In the age of climate change urban planners around the world are well advised to follow this example and improve the green infrastructure with Green Roofs. In this context a trip to Stuttgart is always worthwhile.

Roland Appl



The city has published the bilingual brochure "Climate change – challenge facing urban" climatology" which includes a section about Green Roofs.

Green City Europe: Workshop Proceeding Online

Well-known scientists from all over Europe presented research subjects on green during the first ELCA Research Workshop in the Committee of the Regions at the European Union in Brussels in May 2011. The results of the much-noticed forum with more than 100 participants have been summarized by the European Landscape Contractors Association (ELCA) in the brochure "Green City Europe – for a better life in European cities". The landscape gardeners want to kick-off interdisciplinary research on green on a European level and also accomplish that the corresponding funding to close the research gaps on green is made available in the "8th EU Research Framework Plan" (Horizon 2020). For this reason the research forum focused on topics such as green and health, green and micro particle pollution, green and city climate as well as biodiversity.

An electronic copy of the brochure is available for download at http://www.elca.info/en/Research_Workshop.aspx



Gardens in the Sky:

Greening Cities with Green Roofs – Master Thesis Jennifer Stamatelos

In her master thesis Jennifer Stamatelos investigates governance arrangements and the role of private and public actors in green roof adoption. Case studies from Chicago, London and Stuttgart are giving evidence that governance arrangements are a determinant of implementation success or failure, and their configuration determines the extent to which green roofs are adopted and mainstreamed as an adaptation measure. The responsibilities of public and private actors in the governance process are explored, as well as the considerations they take into account during the decision-making process. These considerations, along with other external conditions, influence the (1) allocation of responsibilities throughout the policy cycle; (2) policy instruments utilized to promote green roofs; and (3) steering strategies used to 'steer' behavior toward adaptation. The findings of this research strongly suggest that public responsibility and engagement throughout the policy cycle are pivotal for the extensive adoption of green roofs.

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The IGRA Award Winner 2011: The Dutch Organisation "Leven op Daken"



The IGRA Green Roof Leadership Award stands as recognition and appreciation for outstanding examples of Green Roof architecture and Green Roof initiatives all around the world. The price should be a signal for architects, landscape architects, city planners, municipal staff, landscape designers and real estate & property developers to explore new ideas for green urban spaces off the beaten track.

The IGRA Green Roof Leadership Award 2011 goes to "Leven op Daken" (LOP), a Netherland-based organisation within the roofing and cladding industry that develops, promotes and implements projects for multiple use of space. The LOP offers a high quality knowledge platform that covers the complete range from consulting to planning to execution. With its periodically published journal "Leven op Daken" the organisation spread the idea of green roofs and multiple use of space in public and strengthens the green roof market.

"Leven op Daken" receives the award for its support and vocational training aimed at young people who are disadvantaged on the labour market. The members of this organisation take social responsibility by reducing the youth unemployment combined with an increase of quality of life through greening.

The "Green City Project" – originally initiated by Caroline Kernkamp – has been running since February 2010 in cooperation with the city of Amsterdam, but the project threatened to fail due to budget cuts. It was "Leven op Daken" member Van der Tol (Netherland's most sustainable landscape contractor in 2011) who stepped in and allowed the implementation of the Green City Project to be continued. Today the members of the organisation ensure the training and support of at least 12 young people per year by providing green (roof) areas, financial support and expertise. With these acquired skills the young people have better prospects on the labour market.

For the green roof industry itself, the dedication of "Leven op Daken" will provide well-trained workers for the steadily growing green roof market. A truly sustainable commitment that deserves an award!

Green City Project holder:

Mastum daksystemen, Marc Evers
Van der Tol, Aart Veerman
Wieringen Prins hoveniers, Philip Biesot
Boko, Hans ter Horst
Van Doorn dakspecialist, Rick Verstappen
BTL realisatie, Olaf Janssen
Leven op Daken, Erik Steegman
Just Strategies, Caroline Kernkamp



Wolfgang Ansel, Director IGRA (third from right), presents the IGRA Green Roof Leadership Award 2011 to members of the organisation Leven op Daken, Caroline Kernkamp and Eric Steegman, Director Leven op Daken (left)



Safety first: the first lessons of the trainees at BDA Dakadvies include a roof fall protection training

The Green Roofs of the Ibiza Airport (Spain): A Challenge for the Landscape Contractors

Spain has paid attention to sustainability when planning new buildings for years. A prime example is the "financial capital" of the Banco de Santander near Madrid with sedum and herb roofs, roof terraces and landscaped underground garages, totaling nearly 100,000 m² in size. In order for air transport service provision to be compatible with environmental conservation, improved sustainability is also a key strategic factor in the present and future of the air transport industry.

The Spanish airport operator company AENA Aeropuertos is adhering to this philosophy by constructing green roofs (~ 1,400 m²) on the new technology and terminal buildings at Ibiza airport last year. Two of the buildings have flat roofs with metal roof covering and PVC plastic sealing. While one of the buildings offered standard technical conditions, the green roof constructors had to pay special attention to the statics of the second building. The maximum load bearing capacity was only 95 kg/m².

The project also involved additional demands on the roof gardener: there are higher wind loads due on the one hand to the airport's proximity to the sea, and on the other hand because of the suction effect of airplanes during the taking off.

The client provided further challenges for the roof gardeners (Proyectos Paisajísticos de Baleares S.L and Jardinería, S.L., Terrassa): higher perennial plants and small shrubs were to be planted on one of the buildings, which was only made possible by using a specially made light substrate.

Additionally, AENA Aeropuertos required that air traffic, be it freight or passenger handling not be affected by the construction work.

The pictures show the good work which the professionals did.

*Hans Seeger
IGRA Representative Spain*



Amazing – the Passengers view



Semi-Intensive Green Roof – Terminal building



Events

World Green Roof Congress 2012 in Copenhagen / Denmark – Urban grey to urban green



LivingRoof.org, the Municipality of Copenhagen and the Danish Ministry of Environment will be extending a warm welcome to the 2012 World Green Roof Congress in Copenhagen which will be held on the 19th and 20th September at Tivoli Congress Centre.

This World Green Roof Congress will bring together leading architects, designers and green infrastructure professionals from around the globe to highlight the need to green the urban grey. The congress will focus on master planning, sustainable urban development and climate change adaptation, with special attention to Green Roofs. Topics include:

- Exemplar architectural design and Green Roofs
- Master planning for ecosystem services in cities
- Integrated habitat design in the urban realm
- Latest research into economic and technical issues relating to green roofs
- Urban agriculture at roof level
- Biodiversity and Green Roofs

Keynote speakers will be drawn from the global community of Green Roof experts, including leading architects with a commitment to landscaping the built environment and officials from cities with dynamic and exemplar Green Roof policies like Chicago and Singapore will inspire. For more information or sign up for the congress: <http://www.worldgreenroofcongress.com/>

ROOF INDIA Exhibition 2012



The 11th edition in "ROOF INDIA" series – will be held from 25-27 May 2012 at the Chennai Trade Centre in Chennai – India. ROOF INDIA 2012 is now the pioneering event in Asia for Roofing, Cladding, Pre-Engineered Buildings, Metal Building, Systems, Tensile Architecture, Steel Structures & Spaceframes, Green Roofs / Roof Landscaping, Roof Waterproofing, Roof, Insulation, Roofing Machinery, Roof Fastening Systems etc. In spite of the global economic slowdown, India is today still the 2nd fastest growing major economy in the world, a booming economy has kick started all industry sectors including the Construction & Infrastructure industry. IGRA will participate at the exhibition and present the current state of technology in the field of green roofs. Be there at ROOF INDIA 2012 at Chennai, India in May 2012 and be part of Asia's Largest Roofing & Allied Technology Event! For more information please visit: <http://roofindia.com/>

Save the Date: 3rd International Green Roof Congress 2013 in Hamburg, Germany



The 3rd International Green Roof Congress 2013 is coming up! Please save the date for this exciting congress which will be held from May 13 to May 15 at the Empire Riverside Hotel in Hamburg, Germany. Join us for a top-level programme focusing on sustainable urban development projects with Green Roofs, giving updates on vertical greenery, and providing interactive workshops and valuable networking opportunities with international leaders in the field. Various excursions to extraordinary examples of Green Roof architecture and to the highlights of the International Garden Show (IGS) and the International Building Exhibition – Building the City Anew (IBA) which are taking place at the same time in Hamburg will be offered. We look forward to seeing you at the 3rd International Green Roof Congress right in the heart of Europe's largest urban development project, the waterside HafenCity in Hamburg!

Check the event section on the IGRA website (www.igra-world.com/news_and_events/events/index.php) to stay up to date with the current event status.

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