

# **COP 2013 GLOBAL COMPACT**

**BIG - BJARKE INGELS GROUP**

**BIG**

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## OUR COMMITMENT

Our public infrastructures for transport, industry, energy, waste, water, sewage etc. are major investments in our public budgets. However they always appear as grey areas on the city map. Like black holes in the urban fabric lost for the public realm – they are big ugly boxes that cast shadows on the neighbors or block the views.

What if we could harness those massive investments and imbue them with positive social side effects from the get go rather than in retrospect? What if we could turn a highway interchange into a man-made valley with a public park? What if the massive volume of a waste-to-energy power plant could become a mountain with ski slopes in a city full of snow but without hills? By proactively cross-breeding the public infrastructure with social programs we can inject new urban life forms in to the heart of our cities – and we can seize massive resources to contribute to the shrinking budgets for urban social philanthropy.

We choose to continue to contribute, being at the forefront of framing a lasting humanity. In 2013, we, the 8 partners of BIG, are pleased to again place our signatures to assure Global Compact that we are committed to the continuous respect for the human race and to the integrity of its environment.

Bjarke Ingels, Founding Partner

Sheela Maini Sogaard, CEO, Partner

David Zahle, Partner

Finn Nørkjær, Partner

Jakob Lange, Partner

Thomas Christoffersen, Partner

Andreas Klok Pedersen, Partner

Kai-Uwe Bergmann, Partner



## OUR INTRODUCTION

Historically the field of architecture has been dominated by two opposing extremes. On one side an avant-garde of wild ideas, often so detached from reality that they fail to become something other than eccentric curiosities. On the other side there are well-organized corporate consultants that build predictable and boring boxes of high standard. Architecture seems entrenched between two equally unfertile fronts: either naively utopian or petrifyingly pragmatic.

Rather than choosing one over the other, BIG operates in the fertile overlap between the two opposites. A pragmatic utopian architecture that takes on the creation of socially, economically and environmentally perfect places as a practical objective. In the big picture, architecture is the art and science of ensuring that our cities and buildings fit with the way we want to live our lives. Architecture is not about building monuments, but about creating possibilities for human life.

## OUR ENVIRONMENT

At BIG we have always incorporated sustainable initiatives into our projects. In almost every instance these initiatives are not discretionary or additive in nature, but constitute the formative acts around which subsequent design solutions are conceived. Interior and exterior finishes are often comprised entirely of self-finishing materials which require little or no maintenance. Our buildings are usually sited to optimize solar orientation and many integrate inventive day-lighting measures through the use of atria, light wells, light monitors or skylights.

For example, the recently completed Gammel Hellerup Gymnasium multi-purpose hall was designed as an underground building with daylight and air, which keeps the courtyard above intact while minimizing shading on the surrounding buildings and ensuring a good indoor climate and low environmental impact. The hall is constructed with faceted concrete walls and a distinctive soft curved roof formed by a series of unique curved glulam beams that take advantage of daylight and reduce energy consumption for lighting and heating. The lighting system is fitted with daylight control, cushioning and motion sensors (PIR), so that the system can be optimally controlled. Photovoltaic panels placed strategically around the existing buildings provide 80% of the energy for lighting and ventilation. Outside, white enamelled steel benches with integrated LED lights designed by BIG are installed on the multi-purpose hall's oak-covered roof.





On the smallest of scales and on a daily basis, BIG follows the “reduce, reuse and recycle” principles in the office, and its large windows allow for minimal consumption of electricity for light and air conditioning, especially in during the summer. When making architecture models, we save material by optimizing the space on a block of foam or wood, and reuse leftover material whenever possible. Leftover material that cannot be reused is systematically recycled according to type—wood, paper, foam, plexi and other plastics.

## Groundbreaking of Amager Waste-to-Energy Plant in Copenhagen

On March 14, 2013, BIG celebrated the groundbreaking of the Amager Bakke Waste-to-Energy Plant (formerly known as Amagerforbrændingen). Located in an industrial area near the city centre the new Waste-to-Energy plant will be an exemplary model in the field of waste management and energy production, as well as an architectural landmark in the cityscape of Copenhagen when completed in 2017. The project is the single largest environmental initiative in Denmark and replaces the adjacent outdated Amagerforbrænding plant, integrating the latest technologies in waste treatment and environmental performance.



AMAGER BAKKE BOARD OF DIRECTORS, INCLUDING CEO ULLA ROETTGER & CHAIRMAN OF THE BOARD MOGENS LOENBORG





Amager Bakke reflects the progressive vision for a new type of waste treatment facility and is conceived as a destination in itself. The roof of the new Amager Bakke is turned into a ski slope of varying skill levels for the citizens of Copenhagen, its neighboring municipalities and visitors, mobilizing the architecture and redefining the relationship between the waste plant and the city by expanding the existing recreational activities in the surrounding area into a new breed of waste-to-energy plant.

The new Amagerforbrænding produces energy for 500.000 people – half the population of Copenhagen – so as a general principle it produces a lot more energy than it consumes. Producing energy from waste is a way to re-use the byproducts of human life.

Since the alternative of burning the trash is to let it rot in a landfill –producing a lot of CO<sub>2</sub> and methane, which are some of the biggest contributors to global warming - the production of a waste-to-energy factory is considered to be carbon neutral. In this brand new facility the flue gas cleaning mechanism is so effective that it is actually considered to be better than carbon neutral – it is instead a carbon sink.

The process of creating electricity and heating for the city has a byproduct of 40 degrees warm clean water that is normally just let out into the ocean. In our building the excess heat is used as under-floor heating in the administrative center, as well as the café/restaurant and visitor center in the winter time.

Furthermore, the process of a waste-to-energy facility has excess heat that is naturally ventilated out of the building.

All electricity use in the building is provided for by the energy generated from the waste processing.





## Hualien Residential - Merging Greenery and Sustainability with High-End Design

Located on Taiwan's east coast with the Pacific Ocean to the east and majestic mountain ranges to the west, Hualien boasts many of Taiwan's most spectacular sights. The city has seen a decline in population due to the increasing number of young people drawn to job opportunities in larger cities, but population ageing in Taiwan is prompting a growing demand for a "second home" where retired seniors can enjoy an idyllic and tranquil lifestyle away from the hectic cities. Hualien Residential seeks to tap into this new potential and targets the older demographic who seeks a retired, yet still active, lifestyle. With the Hualien development we seek to make a utopic, mixed-use community that can live in healthy proximity to nature.

The Hualien Residential development is a utopic undertaking that seeks the perfect intersection between nature and the built environment. The building form morphs depending on the view - from the mountains and ocean, the buildings are a complete reflection of the natural, and when viewed from the city, the buildings form a small urban oasis. Sloping green roofs provide shade, remove heat and produce clean, breathable air, while the proximity to lush vegetation in the apartments creates a stress-relieving environment for residents.

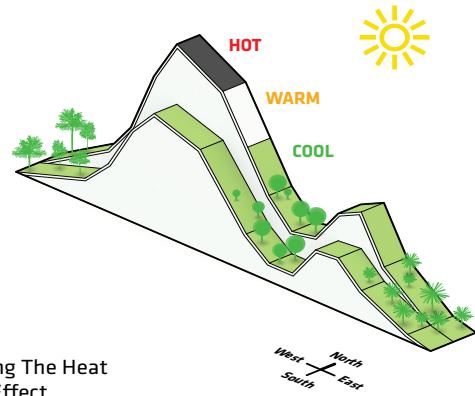




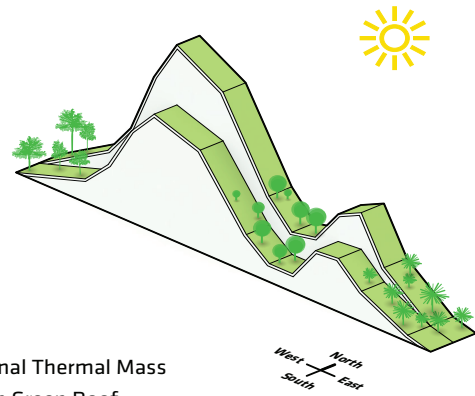
# Engineering Analysis

## Reducing Heat Island Effect

- During hot summer days, conventional roof material would be heated up by the sun and results in urban heat island effect, whereas temperature increase for green roof is minimal.
- Air temperature at 1.2m above the roof may heat up by 5°C for conventional roof in comparison to green roof.
- Since many residential units have balconies facing roofs of the floor below, the incoming wind flowing over conventional roof would increase the ambient temperature at the balconies.
- Table on the bottom right summarizes the % time of thermal discomfort at residential balcony for conventional roof and green roof during each summer month.
- The data illustrates that green roof will provide half the level of thermal discomfort compared with a normal roof. In other words, green roof will help provide better balcony microclimates with more comfortable external temperatures.



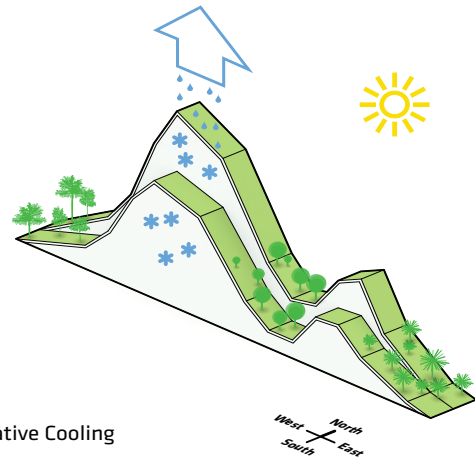
Reducing The Heat Island Effect



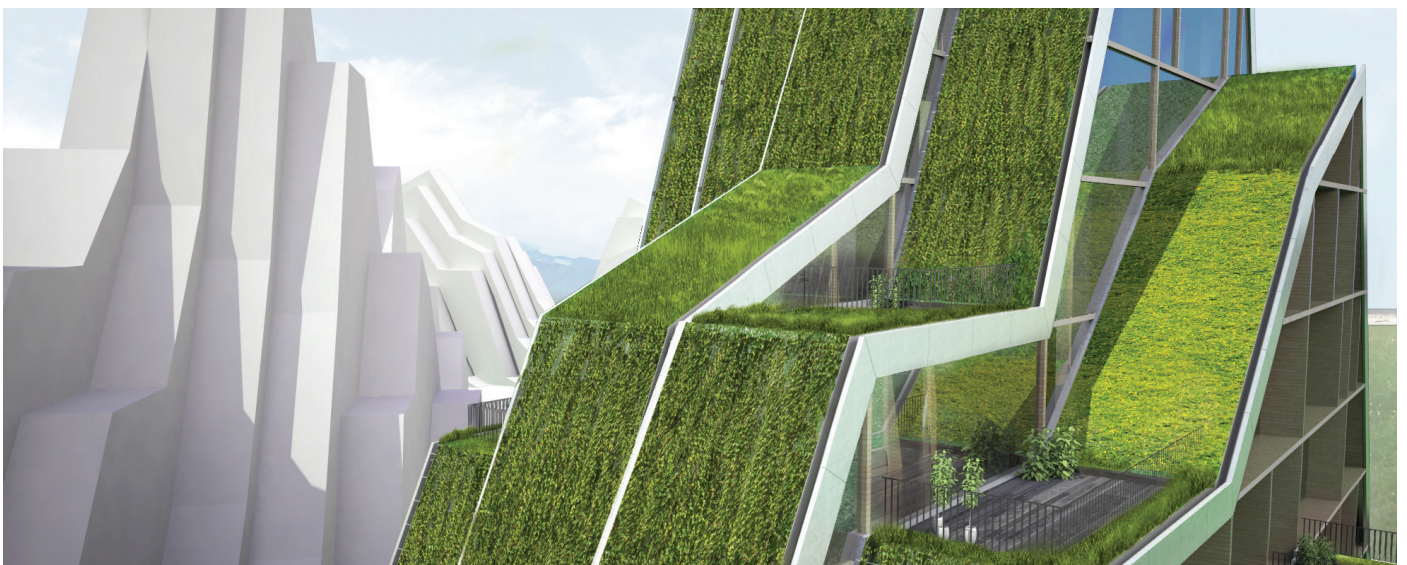
Additional Thermal Mass Through Green Roof

## Reducing Thermal Heat Gain

- In comparison to conventional roof with metal/stone cladding, green roof provides evaporative cooling and lower thermal conductivity of the roof material.
- Building energy simulation shows typical flat on the top floor has a annual energy reduction of approximately 2kWh/m<sup>2</sup>/year.
- Using green roof results in lower roof conductive heat gain and reduction in A/C costs. According to Taiwan Power tariff, price for each kWh electricity is NTD2.90, therefore a typical flat of size 60-80m<sup>2</sup> on the top floor can save about NTD350-460 per year.



Evaporative Cooling





Images courtesy of the Rebuild by Design website

## REBUILD BY DESIGN - Post-Hurricane Sandy Rebuilding

In the summer of 2013 BIG was selected by the US Department of Housing & Development out of 148 applications for an initiative to revitalise parts of the USA devastated by Hurricane Sandy.

The Rebuild by Design competition was launched in June by US Housing and Urban Development (HUD) secretary Shaun Donovan and asked architects, landscape architects, engineers and urban designers to come up with proposals that would help revitalise communities affected by the hurricane that struck the east coast in October 2012. BIG's own office in New York was affected at the time due to a prolonged power outage caused by flooding in Manhattan's Lower East Side.

BIG and 9 other selected design teams will spend three months studying the region and building relationships with local stakeholders. Designs will be focused on four areas: coastal communities; high-density urban environments; ecological and waterbody networks; and the unknown and unexpected.

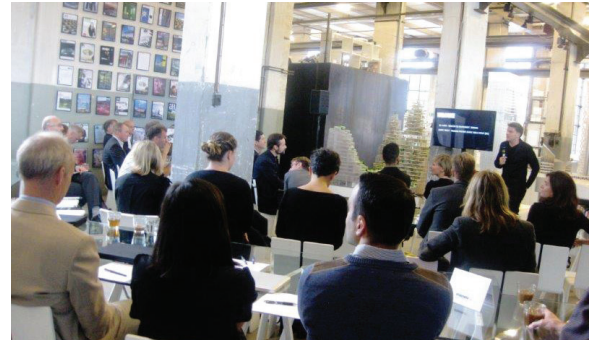
Implementation of the resulting designs will begin in March 2014, funded in part by community grants.

For more information on the Rebuild by Design initiative: <http://rebuildbydesign.org/>

"The projects that come out of this competition will save lives and protect communities in this region and - as the Task Force will emphasise in the Rebuilding Strategy to be released in the coming weeks - serve as models as we prepare communities across the country for the impacts of a changing climate."

-- Shaun Donovan, U.S. Housing and Urban Development (HUD) Secretary





## Copenhagen Urban Futures Forum

In October 2013 BIG opened its Copenhagen office doors to the Copenhagen Urban Futures Forum, a high-level roundtable event on new options for sustainable urban living, co-hosted by Danish Minister of the Environment Ida Auken and BIG's Founding Partner Bjarke Ingels. Leaders in architecture from across Europe, including Bjarke Ingels, Jan Gehl, Reinier de Graaf (OMA), Jolyon Brewis (Grimshaw), and more, joined with CEOs and leaders from construction, science, technology, and finance, including NCC, Arup, the Climate Group, and Danish leaders in business and science, to take new steps towards a framework for urban futures. The U.S. Embassy to Denmark sponsored the participation of leading American architect and urbanist. The newly appointed US ambassador to Denmark, Rufus Gifford was also present, as were representatives from various Danish ministries.

The Forum was a one-day discussion, in a highly interactive format, seeking to reach actionable recommendations in six priority areas: Liveability and urban form, resource efficiency and infrastructure, climate adaptation, business/trade & investment, partnerships/governance & investment, and 'asset-light living' (such as car-sharing services). It is shaped and led by John Manooch, architect with Resource Vision and founder of the Futureperfect Association, based in Sweden, who previously wrote the policy on sustainable lifestyles of the UN Environment Program.

The output from the meeting will be a perspectives paper agreed by the participants. The Ministry of Environment will use these outcomes in ongoing work to update the planning system for sustainability.

"We are facing enormous challenges both environmentally and economically, and I truly believe that a greener economy with more focus on resource efficiency, effective solutions for handling climate change, and an overall focus on sustainability is the way forward. It is clear that our cities will be incredibly important in implementing green economy in our everyday lives. If we are to achieve the best results, we have to share our best practices and experiences with other pioneers in sustainable city development. This forum allows us to get valuable input to our continued work with creating more sustainability in our cities."

--Ida Auken, Minister of the Environment, Denmark

SUPERKILEN PARK IN COPENHAGEN



## OUR HUMAN RIGHTS

BIG firmly believes that human rights are indisputable universal truths. We are unwavering in our determination to, as far as we are able, provide all humans the rights and freedoms they wish to enjoy. BIG will never voluntarily be complicit in human rights abuses, and instead always seek to uphold the rights and freedoms of all, contributing where our reach allows.

In 2013 we declined a number of prominent projects in countries and regions that we deemed questionable in terms of their attitude toward human rights, most notably Saudi Arabia. During the initial meeting with the potential client, it became apparent that if BIG were to accept the job, our architects would be required to include in the proposal designs that are severely discriminatory toward women. As a company that is led by a female CEO and strives for equality between our male and female employees, we found this unacceptable and immediately declined this opportunity to work in Riyadh. We cannot be involved with any activity that contributes to restricting the freedom of women or hindering the basic human rights of women for any reason, cultural or religious.





## Critical Home Repair with Habitat for Humanity

In June 2013, BIG employees in New York took some time off to give back to their community by assisting post Superstorm Sandy home rebuilding efforts on Staten Island with Habitat for Humanity.

At BIG we believe that housing is a basic human right, and Habitat for Humanity's mission statement echoes this belief: "Habitat for Humanity believes that every man, woman and child should have a decent, safe and affordable place to live. We build and repair houses all over the world using volunteer labor and donations. Our partner families purchase these houses through no-profit, no-interest mortgage loans or innovative financing methods."

At the same time, BIG has been involved in an intensive and unique collaborative research process involving the U.S. Housing and Urban Development Department, New York University, Regional Plan Association, Van Alen Institute, Municipal Art Society, and ten teams of planners, landscape architects, engineers, scientists, economists, and experts to come up with pilot projects for flood-resilient infrastructure and redevelopment plan as part of the US government's post-Hurricane Sandy efforts to not only rebuild the community and ensure the security of human lives, but also improve the state of practice, stimulating innovation, entrepreneurship, and green job creation.





## OUR LABOUR RIGHTS

BIG's greatest asset is its employees. At BIG, we take employee satisfaction as seriously as we do architectural design. The larger we grow as a company, the more we strive to create a workplace that encourages input, dialog, interaction, and collaboration across the cobweb of relations of BIG's flat hierarchy. Global Compact's principles relating to labor rights are considered literally and so followed. BIG opposes any form of forced and compulsory labour, condemns child labour, effectively recognizes the right to collective bargaining and does not practice discrimination of any kind.

### Labour law in Denmark

BIG, as a company headquartered in Copenhagen, Denmark, follows Danish labour laws, which are known for its relatively labour-friendly employment terms on salary, working hours, overtime pay, holidays, pension, notice periods, etc. The average working week in Denmark should not exceed 48 hours, with 37.5 hours being the average. Every full-time employee is entitled to 30 days' annual leave on the basis of 2.5 days for each month worked the previous year. A pregnant employee is entitled to absence from work from 4 weeks before the expected birth, and each childbirth gives the parents a legal right to 52 weeks maternity pay from the government.

The unions which exist in the Danish architecture industry are extremely strong, and should employees choose to join any of these, this choice is respected. However, it is not actually necessary for employees to become members of any such unions to benefit from collective bargaining. BIG is a member of Danske Arkitekt Virksomheder, the Union of Danish Architect Companies and is therefore bound to implement the benefits negotiated by the architects' unions for architects.







## Safety in the workplace

BIG is an architecture studio, so in addition to the facilities of an average office, BIG also houses workshops fully equipped with the most advanced laser cutters, wood cutters and various other tools and materials necessary to produce the elaborate architectural models that showcase our designs. Needless to say, we have strict guidelines for the use of the model workshops and take extreme precautions to ensure the safety of anyone handling said tools and machinery as well as the health and well-being of the office's employees in general. Good ventilation is provided for the spray painting and foam cutting areas. The office first aid supplies are kept on an easily accessible shelf in the center of the office and regularly checked and restocked.

## Elimination of forced labour

There is neither forced nor compulsory labour at BIG, and we neither condone nor tolerate this within the framework of its own studios or its collaborators. Should any managing partner be informed that employees are forced to work, the situation is solved with swiftness and seriousness. We neither seek out companies which employ forced labour, nor do we condone this type of behavior towards our colleagues or collaborators. In countries where this could be an issue, or may even be prevalent, and where we are able to influence the construction process, forced labour of any kind would not be tolerated whether the collaborators be from the private or public sector.

## Abolition of child labor

BIG is not involved in any projects which make use of child labor, nor will we ever seek to be. The epitome of BIG's philosophy of hedonistic sustainability is the opposite of children forced into a situation of labor. Hedonistic sustainability is about creating tolerable situations in which all peoples may live happily for the longest period of time. BIG will never tolerate child labor and will always support all efforts to abolish it.



## A great place to work

At BIG, one of our most important goals is to keep our employees happy at all times. BIG maintains an employee benefits program called “Great Place to Work.” This program will include opportunities for employee development (such as training courses for our architects in addition to our ongoing BIG Picture lecture series), a periodically updated book of discounts for gyms, swimming pools and restaurants, etc., and extra budget allocated to team events and activities outside of the workplace, just to name a few.

All BIG employees, regardless of position held or field of expertise, are given a voice - a voice which can be heard when required - happy, concerned, suggestive, or cooperative. The employees become more aware of their importance to the company by being encouraged to communicate with the management regarding all areas of the growing company, and to contribute ideas and guidance when the company associates itself with unions or standards in countries with which they are themselves familiar. We are also establishing an intern evaluation system, which allows interns, who are generally at BIG on a short-term basis (usually 6 months), to discover their strengths and weaknesses following the completion of projects as part of their architectural education.

## Elimination of discrimination in respect of employment and occupation

BIG upholds this principle by choosing to not practice discrimination of any kind. All employees are chosen on their talents and skills alone, as well as the requirements for the project. We follow the employment and labor laws of the countries in which our employees are employed. BIG has no tolerance with regard to discrimination in or outside of the workplace.

Beyond discrimination is bullying and harassment of colleagues – this also is an issue which cannot be taken lightly. Therefore we have a simple policy in the personnel handbook against bullying. It is a practice which is greatly denounced at BIG and will not be tolerated.





## ANTI-CORRUPTION

BIG is a company that values transparency and does not tolerate any form of corruption. We are determined to maintain the highest standards of integrity and work ethics among our staff and across all areas of activity. We therefore maintain a policy of zero tolerance towards corruption in all its forms. Internally, we hold a BIG office-wide meeting once a month, during which Bjarke Ingels, founder of BIG, and the CEO report the status of the firm to all employees and give answers to any questions that are raised.

Externally, when submitting to Requests for Qualifications (RFQs) or Requests for Proposals (RFPs), we would always inform the client if there is any potential conflict of interest, and make sure that the collaborators on our team do so as well. When choosing projects to pursue, BIG also makes sure that our collaborators and clients are not involved in any activities that suggest corruption. We will not give or accept bribery in any form, and we will not use deception, trickery or breach of confidence to gain an unfair or dishonest advantage.



## OUR GOALS

### ENVIRONMENT

We have always incorporated sustainable initiatives into our projects by thinking outside the box. The general perception of sustainability is this idea of a moral code: How much of our existing quality of life are we prepared to sacrifice to afford being sustainable. It is the protestant perception that it has to hurt to be good and that a sustainable life means doing less than a normal life. But we are looking at how sustainable cities, or sustainable buildings, can increase the quality of life – to find ways of designing cities and buildings as double ecosystems that are both ecologically but also economically profitable and where the outcome doesn't actually force people to alter their lifestyle to have a better conscience. They can live exactly the way they want, or even better, because the world and the city are designed in such a way, that they can actually do so. Essentially it is to approach the question of sustainability not as a moral dilemma but as a design challenge.

In the coming year we will continue to strive for what we call “hedonistic sustainability,” which is sustainability that improves quality of life for everyone while minimizing the impact on the surrounding environment.

### LABOUR RIGHTS

In 2012 we introduced a new employee benefits program called “Great Place to Work,” which includes opportunities for employee development, extra budget for team events and activities, and a periodically updated book of discounts for gyms, shops and restaurants with the hopes of enticing employees to spend less time in the office and interact more with other individuals than colleagues. In 2013 the program is continually being expanded.

Our ongoing goal is to ensure the happiness and satisfaction of our employees, and we will also continue to encourage feedback from all employees and aim to better integrate our employees into the countries in which they are employed as we branch out from our home base in Copenhagen into the rest of the world.





## HUMAN RIGHTS

Our ongoing goal has not changed from the previous year – we continue to work to ensure that human rights are developed and supported in the designs of our projects.

BIG continues to give students from across the globe the opportunity to work as architects on our projects. As part of this teaching process, BIG invites internal and external experts to lecture on a variety of areas. BIG will always seek to uphold the rights and freedoms of all, contributing where our reach allows.

## ANTI-CORRUPTION

Our goal is unwavering : BIG neither subscribes to nor encourages any form of corruption. BIG will not participate in corruption; BIG will not contribute to corruption; BIG will not support corruption.



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