Dr. Carlo Ratti, the Italian architect – designer – engineer is considered one of the 50 influential designers in the world. His design creations are exhibited in prestigious museum and venues of the world, prominent among them are: **Venice Biennale; The Design Museum, Barcelona; The Science Museum, London; GAFTA, San Francisco and Museum of Modern Art, New York** – to name just a few.

He has co-authored more than 250 publications and holds an amazing record of patents of his design creations. An architect, a designer, an author, engineer, a professor – Dr. Ratti holds multiple appointments in various prestigious institutions. In short, Dr. Carlo Ratti's stature in the world of design is simply "Unparalleled"!

Johnny D interviews the innovative architect – engineer – designer Dr. Carlo Ratti to discuss about The **Mile – The World Highest Vertical Park and Observation Deck**, which was officially presented to the **public for the first time at MIPIM 2016, the world's leading real estate fair in Cannes on the March 16th, 2016.**

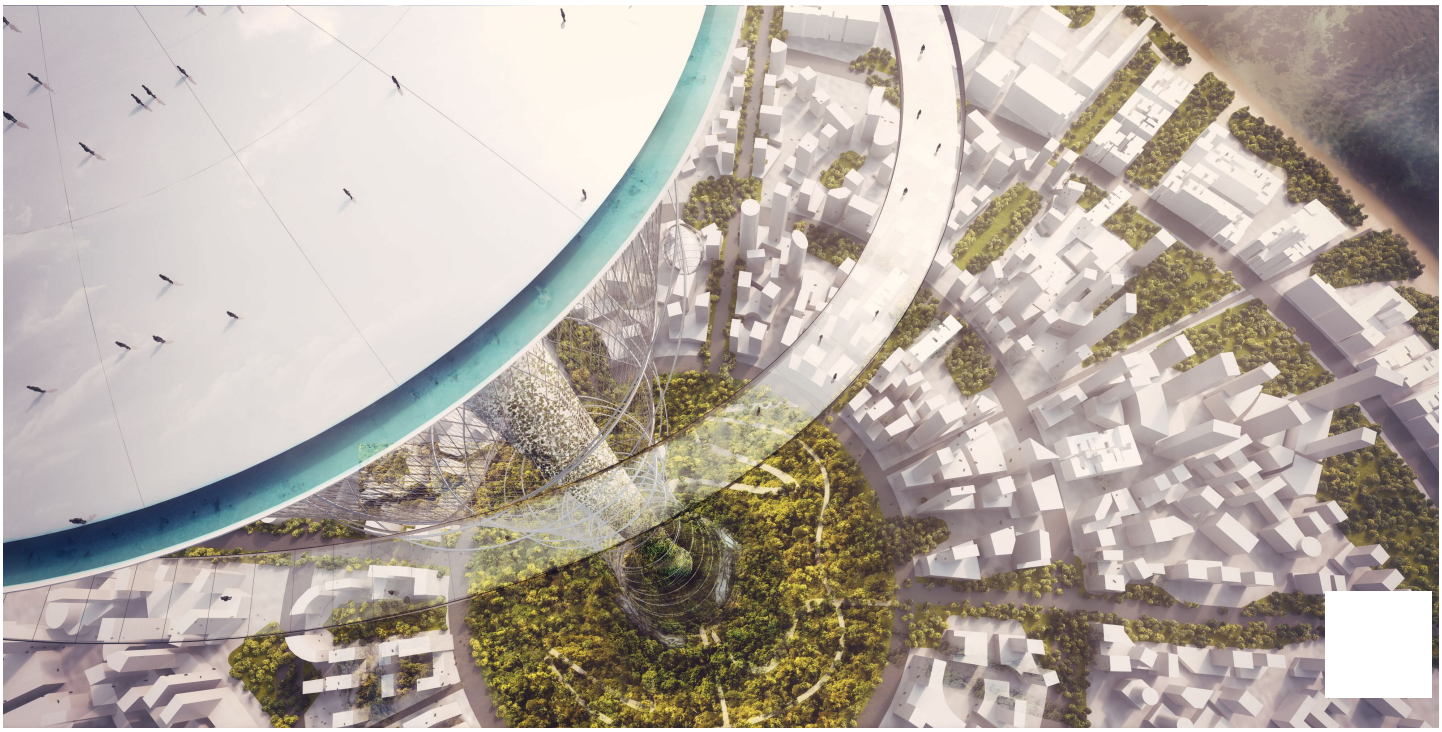
The Mile has been developed by international design and innovation office **Carlo Ratti Associati** together with **German engineering firm schlaich bergermann partner,** and **British digital design studio Atmos.**

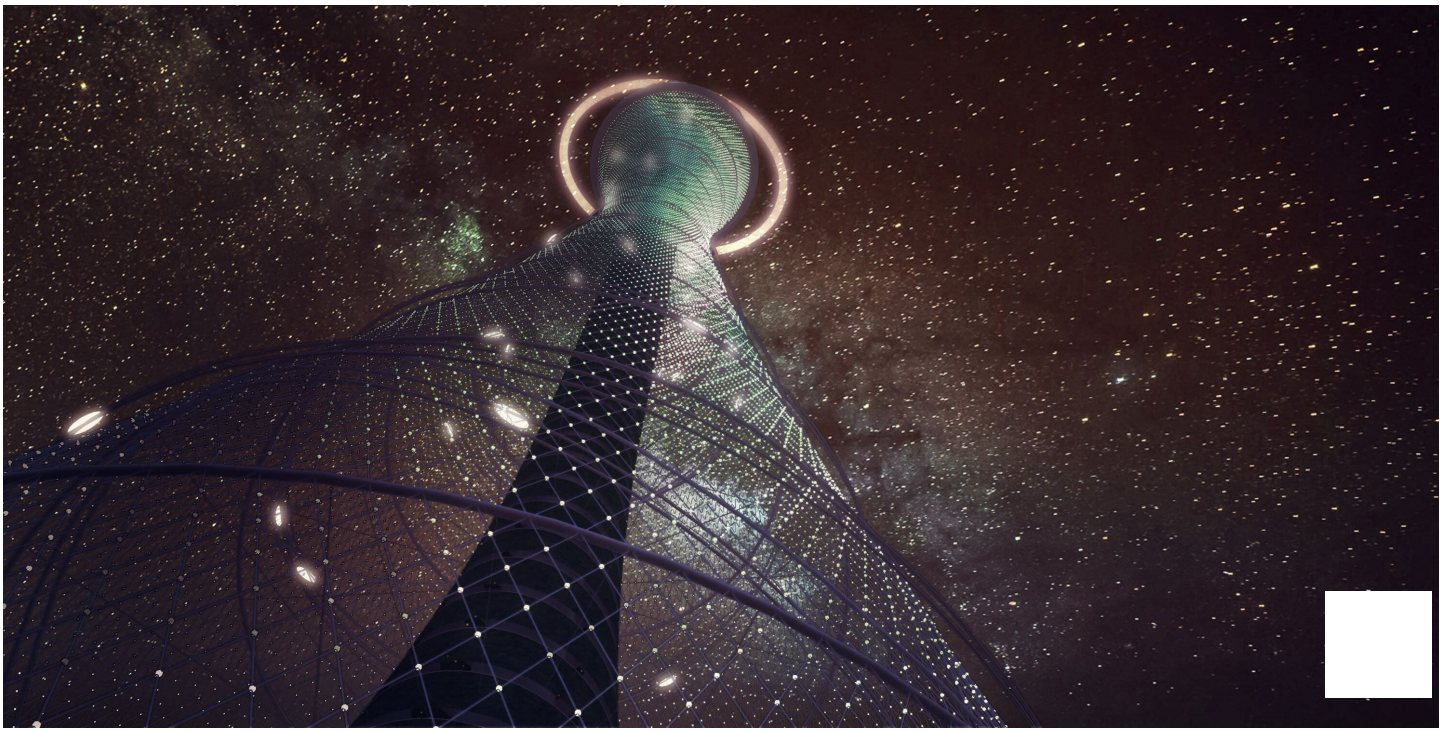
Johnny D: Please enlighten Design Trends' esteemed readers about "The Mile – The World's Highest Vertical Park and Observation Deck".

Carlo Ratti: **The Mile** is a concept design for a one-mile high vertical park and observation deck developed by our office, **Carlo Ratti Associati**, together with German engineering firm **Schlaich Bergermann partner**, and British digital designers **Atmos**. From base to apex, the structure will be covered by plants and greenery, inhabited by hundreds of animal species, and criss-crossed by a delicate latticework of transportation lines. The vertical park will be topped by a publicly-accessible observation deck.

JD: How much time was spent on 'Research Work' to conceptualized The Mile?

CR: When a client asked us to conceptualize the design of the world's highest building, we were somehow reluctant. We didn't want to give birth to the umpteenth tallest building. However, we soon started thinking about Icarus' dream, and its many representations in the history of architecture – from the Tour Eiffel to Frank Lloyd Wright's The Mile High Illinois – and we got into the project. As Atmos director Alex Haw suggested, "There is an aspect to all architecture that is about lifting humanity out of the ground – up towards the light; The Mile is another episode in this evolution." In total, we have been working on The Mile for around six months.





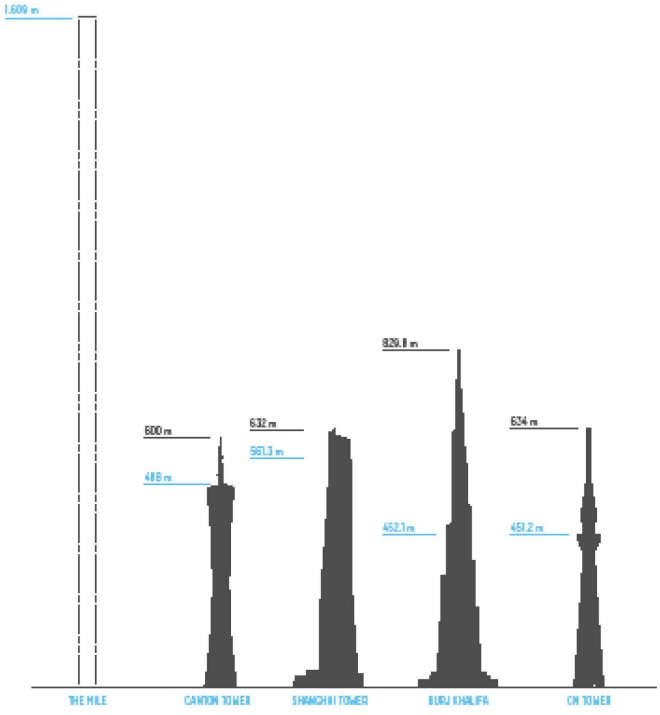
JD: Please enlighten our esteemed readers about the brainstorming sessions by the team of architects and engineers to design the concept.

CR: We didn't want to design another skyscraper. We were thinking about something different: a living ecosystem, a vertical natural park, a new kind of public space. Parks are vital urban features – the essential component of nature that makes any man-made city possible. The Mile dramatically places this essential resource at the core of a world metropolis – both vertically (in section) & horizontally (in plan). Imagine you take New York's Central Park, turn it in vertical, roll it and twirl it. This image emerged from a very initial brainstorming process within our team – which included a broad range of designers as well as philosophers, sociologists, and engineers.

JD: Please highlight the 'Major Design Elements' the team has incorporated in the spectacular project.

CR: To achieve The Mile's height, a technical study was developed under the guidance of Joerg Schlaich, one of the world's most talented engineers and the founder of German firm Schlaich Bergermann Partner. This allowed us to implement a ground-breaking lightweight structure, based on a central, 20-meter-wide shaft, kept in compression and secured through a net of pre-stressed cables all around. On the periphery, a series

of orbiting capsules allow visitors to gradually ascend to the top, enjoying a spectacular panorama at different speeds and angles of ascent. The Mile has been conceived to be much more than just an observation deck; it's a journey as much as a destination; an incredible ascension as well as arrival experience. It entails what Atmos director Alex Haw calls "a choreography of gravity; a voyage through the core elements of architecture, out into the wilds of our climate above the clouds, and back."



	name	built	location	deck	total	
1	**The Mile**			**1.609**	**1.609**	
2	Canton Tower	2011	China - Guangzhou	488	600	The highest indoor deck is at 448.8 m
3	Shanghai Tower	2015	China - Shanghai	561	632	Observatory on levels 121-123
4	Burj Khalifa	2010	UAE - Dubai	452	829	124th floor, outdoor
5	Tokyo Skytree	2012	Japan - Tokyo	451	634	Three additional observation decks at 340 m, 345 m, and 350 m
5	CN Tower	1976	Canada - Toronto	446	553	Two additional observation decks at 342 m (outdoor) & 346 m (indoor).

JD: What will be the major challenges to be faced by your teams while executing the project?

CR: We are about to finalize the site where The Mile will be built. We have been studying closely the financial models of successful structures such as Paris' Tour Eiffel, or The London Eye, whose profits from visits amount to tens or hundreds of million dollars. Our vertical park will create an even more extraordinary attraction! Our client's studies show that the building will become fully self-sustainable quickly – and guarantee revenue for the hosting city.

JD: What will be the time period to execute the project for the world to marvel in awe?

CR: We can foresee a period of ever-increasing awe of about 30 months.

JD: What will be the approximate cost of the project?

CR: We have finalized the analysis of financial and structural sustainability for this project. According to our calculation, we can anticipate a cost between 1 and 2 billion dollars, according to several variables. The investment will be rapidly repaid.

JD: 'Sustainability' has become mandatory in project designing worldwide. Architects are going beyond to incorporate and achieve the unexpected. Please specify 5 major 'Sustainability' Characteristics in this project.

CR: Nowadays, sustainability is a fundamental requirement for any architectural venture – as fundamental as gravity. Here more than ever, we have sought to address various keystones of sustainable design, highlighting the social, and economic as much as the physical and environmental.