

The XR School  
Gordon Kipping  
Core 2 - A4102\_007

Climate change represents the single largest threat to our planet and humankind today. We have seen monumental efforts to reverse this by international organizations, governments, corporations and individuals but these efforts are simply not enough. Those in a position to mitigate this disaster are letting us down.

As we have seen of late, youth are emerging as the greatest hope for change and survival. While we can only hope that the situation doesn't get too disastrous before it gets better, it is the education of the next generation of people that will eliminate the pending disaster and establish a climate neutral planet.

A little over a year ago, the Extinction Rebellion was formed by a group of academics. Extinction Rebellion or XR is a loosely networked, decentralized, grassroots global environmental movement with the stated aim of using nonviolent civil disobedience to compel government action on climate change.

Our project for the studio will be the design of The XR School. The XR School will be a New York City public elementary school with a curricular focus on climate change - its causes and the paths to stabilize it. The school building you design will be an integral tool to these lessons for the students.

#### **We're Running Out of Time**

Scientists agree that we must keep global warming below 1.5°C above pre-industrial temperatures. We're already at +1.1°C. Without urgent action we'll reach 1.5°C in just 20 years.

#### **Small Increases Really Matter**

A 1.5°C increase will destroy, just for example, 70%-90% of coral reefs. At 2.0°C, we'll lose over 99%, and see drastic increases in extreme weather—stronger tropical storms, longer droughts, heavier downpours, and hotter heatwaves.

#### **We're Not Doing Enough**

Even if every country delivers on all their current promises to reduce emissions, we're heading for warming of over 3°C by 2100.

#### **If We Don't Respond Right Now...**

... the Climate and Ecological Emergency will be out of control very soon. The hotter it gets, the higher the risk of triggering irreversible feedbacks.

#### **Mass Extinction**

Our planet's sixth mass extinction—this one caused by human action—may now be underway. We depend on the natural world and biodiversity to survive, so the Ecological Emergency presents as great a risk as the Climate Emergency.

#### **Food Shortages**

Loss of pollinators—over 75% of flying insects' biomass, in 25 years at German sites—threatens food supply. Staple crops like wheat are already harmed by changing weather patterns.

The XR School will be the first net zero energy building in New York City, generating its own energy, storing it and feeding it into the grid when possible.

The XR School will plant and harvest its own food for school breakfast and lunch. A teaching kitchen will staffed by the students will prepare and serve the meals.

Since the structure of a building typically accounts for 80% of the energy required to build a building from raw materials, we will be keeping the structure of the existing building. Surgical removal of parts of the structure will be permitted where required to facilitate the program.

We will be necessarily be adding structure and mass to the building to accommodate the following additional programs:

- Urban Farm
- Teaching Kitchen
- Greenhouse
- Green Lab

We will make extensive use of diagramming to develop and describe the program and the building. Flows of people and energy generation & consumption; vectors of structure, light & air; program spaces and their relationships to the context; and any other factors defining our projects will be diagrammed. Isolated diagrams will be

### **Water Shortages**

The UN predicts that by 2050 more than 5 billion people—about half the world's predicted population—will suffer water shortages for at least one month per year.

### **Extreme Weather**

A 4°C rise in temperature will expose 74% of people to deadly heat. Flooding, wildfires, and storms will kill many more.

### **Disease**

Higher temperature and resulting increases in poverty will spread disease, expanding the range for diseases like malaria and dengue fever and putting hundreds of millions at risk.

### **Forced Migration**

The Climate and Ecological Emergency will drive people from homes on a scale far beyond anything seen in human history: tens to hundreds of millions of displaced climate refugees by 2050, according to the UN.

### **War and Political Turmoil**

With resources scarce and societies under increasing environmental stress, the likelihood of war—including nuclear war—and other conflicts will increase.

### **Societal Collapse**

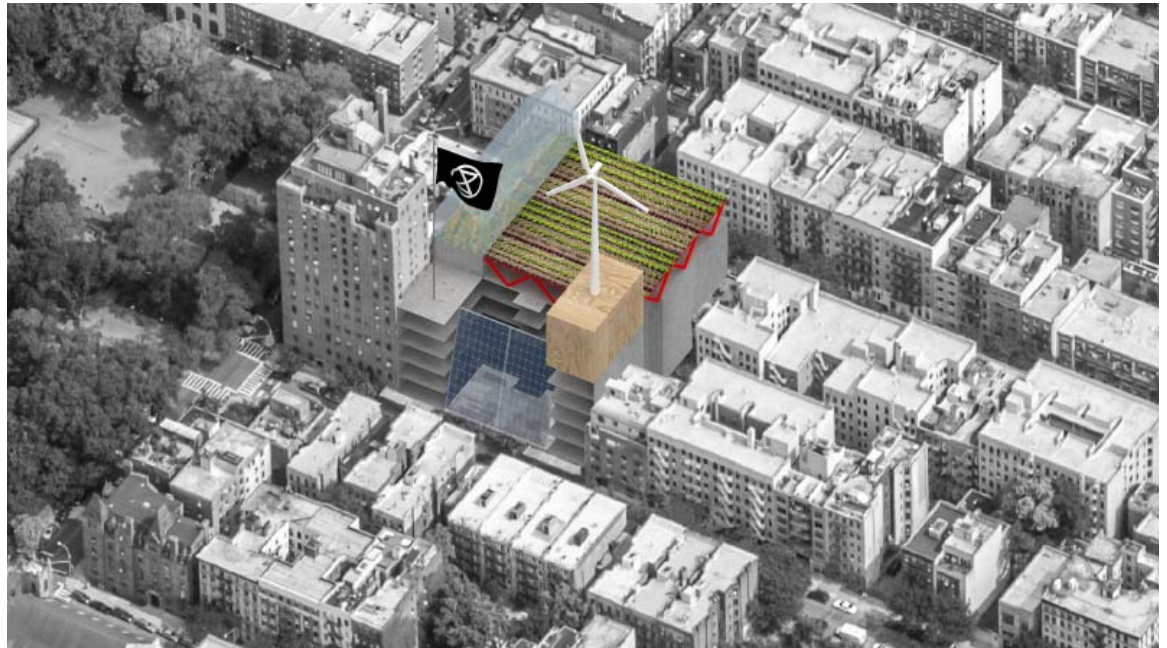
Combined escalation of all of these disasters puts society itself under threat. In the words of the great naturalist David Attenborough, "The collapse of our civilization is on the horizon."

From the Extinction Rebellion manifesto

continually developed through an iterative process provoked by the contamination of each to one another. This will culminate in an idealized and multilayered project diagram which will guide the development of our school as it is elaborated and made constructible.

We will visit the Edible School Yard project by Work AC, The New York Botanical Garden and the offices of ARUP for a workshop on sustainable design practices.

Our student mentor will be Jacob Gulinson, GSAPP, M.Arch.(2020).



Gordon Kipping is a native of Toronto, Canada who has been living and working in New York City since 1995. Upon completing a Bachelor of Applied Science degree in engineering in 1989 at the University of Toronto, Gordon Kipping worked as a mechanical engineer in building services, eventually attaining licensure as a Professional Engineer in 1993. In 1991, he returned to school to study architecture at the Southern California Institute of Architecture where he received a Master of Architecture degree in 1995. Since graduation, Gordon Kipping has worked for the offices of Philip Johnson, Greg Lynn, Pei Cobb Freed & Partners and Davis Brody Bond. Coinciding with his employment in architectural offices, Kipping produced conceptual and built work under the name G TECTS. As G TECTS, he had a solo exhibition at StoreFront For Art and Architecture entitled Residual Urban Site Strategies, and authored a book entitled Ordinary Diagrams: Electronic Information Technologies and Architecture. The book was cited in the Terence Riley essay The Un-Private House accompanying the Museum of Modern Art show of the same name. Comparisons were drawn between the over-exposure produced by glass in the Mies van der Rohe Farnsworth House and the similar effect in a G TECTS proposed house as facilitated by electronic information technologies. The book and a print edition of its final plate Entity as Information Zoom are in the collection of the Museum of Modern Art and were on display in the exhibition Cut 'n' Paste: From Architectural Assemblage to Collage City and hanging today for the inaugural exhibition at the newly expanded MoMA. Gordon Kipping has been a Visiting Adjunct Assistant Professor at the Graduate School of Design at Harvard University and has assisted Frank Gehry in teaching design studios at the School of Architecture at Yale University. Currently, he is an Adjunct Assistant Professor at the School of Architecture at Columbia University, a position he has held since 2000. Since 1999, Kipping has been principal of G TECTS, focusing on research and projects for a number of institutions, corporations, government agencies and private individuals.

