A Kind Curiosity Gives you Meaningness: Interview of Reputative Architect Prof. Xiangfu Chen

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1 70 Years Fled, A Glorious Life Remains

It was a normal winter day in Beijing. The weather was sunny and dry, just like the rest part of North China. While 600 miles away in Shanghai, the sky was covered by grey cloud with cold rain drizzling.

The distance between two cities vanished via an invisible electromagnetic wave transmitted in million meters.

"7 mega projects,

7 national lectures,

7 handbooks edited,

7 national first prizes,

7 pioneer achievements,

7 large engineering consultancies,

7 research reports noted by the central leaders,

70+papers,

70+ designs,

7 million words of works in 70+ years."

These are the proudest accomplishments listed by an elder who has devoted his whole life to the construction of China.

2 China's Theory and Tech Has Been Leading for 20 Years

Professor Xiangfu Chen, the reputative architectural structure and geotechnical engineering expert with international fame in high-rise buildings has managed the design and construction of more than 70 projects. However, he has a predilection for

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the building standing upright in Qingdao, Shandong Province (Figure 1).



Figure 1. Qingdao International Financial Centre, designed by Prof. Xiangfu Chen

"The most impressive work of mine shall be the Qingdao Bank of China Building, which is renamed Qingdao International Financial Centre now." said him, "249 meters in height! In 1990s! Totally designed and constructed by Chinese! There was no palification and we applied natural subsoil because it's

built by the seaside. The highest building based on natural subsoil in the world at that time! Even taller than that American building, which is 212 meters' high."

'That American building' referred by him is Millennium Tower in San Francisco, California. It has become the 3rd highest building as well as the highest residential building in San Francisco after the completion in 2009. With the luxury interior and great view of Bay Area, it attracted the purchases of many celebrities and millionaires. Nevertheless, the building has been detected to have a 1-inch settlement with certain degree of tilt angle per year since 2016, when the age of building was less than 10 years (Figure 2).



Figure 2. Millennium Tower, San Francisco, California

"Terrible. A settlement of 45.7 cm has already exceeded the safety standards of high-rise buildings." Commented Prof. Chen. The owner of Millennium Tower used to seek help from one of the top construction companies in U.S., and they offered a solution with a budget ranging from 200 to 500 million, while the total cost of the building was 350 million. Eventually, the owner of the building found out Prof. Chen's work Settlement Calculation on High-Rise Buildings: Theory and Application published by Springer in 2012. They were so inspired that they tried to contact the author by any kind of means including diplomacy (Figure 3).

"Finally, we found out a solution based on my theory and the experience and techniques we had to correct the tilt and to control the settlement, which was way less costly than American'

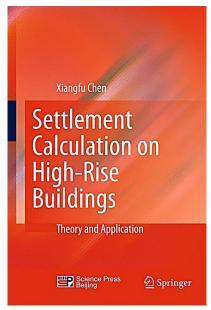


Figure 3. Chen, X, 2012. Settlement Calculation on High-Rise Buildings: Theory and Application, Springer

plan." Said Prof. Chen. The Qingdao International Financial Centre designed by him was built in 1996, with an expected settlement range of 11 cm. More than 20 years have passed, now the building has still been rather solid in addition to a 7-cm settlement.

"What does that mean? It demonstrates that the theory and technology in this field in China has been leading in the world for at least 20 years, and it's still not outdated." Explained Prof. Chen.

3 Study Broad, Work Hard, Think New

As one of the best architects in his generation who has worked in the frontline of construction for decades, Prof. Chen is expecting more from youngsters.

"When I was the doctoral supervisor in Tongji University, there're several requirements for my students." said Prof. Chen. "First of all, work hard in basic disciplines. Not only architecture subjects but also mathematic, physics, applied chemistry, topology, finite element, and chaos theory, etc. These subjects can be helpful in their research, and they can also provide a new perspective of problem solving."

"Secondly, they should be able to endure hardship. Good architects are supposed to work in the frontline of construction, where they can find out the problems and solve them. They shall not work in the ivory tower, thus theories and practice experience are both essential to them."

"Thirdly, don't forget to learn from our ancestors while studying advanced foreign knowledge. They should refer to both to create their own innovation, to work creatively and to solve problem with new methods."



Figure 4. Figure 4a 4b Dr. Oleg Nicolaevich Rusak awarded Prof. Chen the Order "Star of Glory"

Study broad, work hard, think new. The precious advice comes from Prof. Chen's life experience. It is the spirit of perseverance and exploration that makes China a modern country with hundreds of skyscrapers standing in its cities.

4 Smart City is Future City

Flesh ages by time, while mind can be sharpened. Nowadays, Prof. Chen's opinions on the urbanization in China are extremely profound.

"The problems of urbanization come with the development of economy." Explained him," urbanization could cause the shortage of land, population explosion, traffic congestion, environmental pollution and resource wasting, which have negative impacts on people's life. Thus, what should we have is urban-and-ruralisation rather than urbanization. We should revitalize the rural economy and construct small towns, which can help us to avoid City Disease."

In 2017, President Xi has announced that it is significant to solve agriculture, rural areas and farmers problems as well as implement the strategy of rural revitalization. Moreover, during a lecture about small town development in 2002, Prof. Chen has suggested to build picturesque towns as well as pastoral communities in China.

"Actually, there's few experience we can rely on in the urban and rural area developing." said him, "But now we are seeking a right path, and I feel confident about the result."

"The hotspot issue in urbanization in China is the intelligentialization of the city." Commented Prof. Chen, "What we want is more than just an intelligent city, it is a smart city, which

requires the application of chaos theory, cloud computing, big data and other advanced information technology to accomplish the intelligentialization of the traffic and life in the city."

"Now we are gradually achieving the intelligent city, yet the smart city has not been implemented. There are two features of smart city: one is smart traffic, another is ecological environment, which can be the cure of the problems we are facing. However, just like the universe and science themselves, the wisdom is endless, so probably the development of smart city is endless as well, and it remains a long process of searching." Said Prof. Chen.

So, what could life be in the ideal smartcity in the future? "There would be four features in the future smart city: fresh air, clean water, safe food, and ecological residence." Answered him. "These four elements are indispensable for people living in the city. When the problem of traffic congestion and pollution are solved, the air and water quality can be protected. The food safety has always been put in the strategic height in China, so it is also very important. As for the residence, in the future the ecological architecture would be encouraged, which emphasizes the function of architecture in the whole ecosystem and put people in the first place. After all, people orientation is the core of smart city."

Care of people, care of environment, Prof. Chen's ideas has shown the way of sustainable development to many countries across the world. In 2018, Dr. Oleg Nicolaevich Rusak, the President of International Academy of Ecology and Life Protection Sciences of United Nation awarded Prof. Chen the Order "Star of Glory" to honor his contribution in ecology and the international sustainability (Figure 4).

5 A Kind Curiosity Gives You Meaningness

All the awards and titles remark a stage, not a lifetime. At the beginning of 2019, Prof. Chen has taken down more thought about his life.

"A charmed family gives you happiness."

A healthy body gives you fitness.

A blessed longevity gives you creativeness.

A kind curiosity gives you meaningness."

When he was a young man, he didn't waste his youth and talent, that's why now he can proudly say that he has devoted the whole life to the construction of his motherland and has left abundant knowledge for the next generation. Professor Xiangfu Chen has taught us how to live a meaningful life with his story.

"Don't call me an old man!" laughed him, "Recently President Xi suggested to build the Xiong'An New Area (Figure 5),

and I will participant in that too!"



Figure 5. Prof. Chen in a lecture about Xiong'An New Area