

**The text of speech given by Ersin Ariođlu during the BIBM 2002,  
17<sup>th</sup> International Congress of the Precast Concrete Industry  
Lutfi Kırdar Convention Center Istanbul, on 1<sup>st</sup> May 2002**

**Mr. Chairman;  
Distinguished Guests,  
Eminent Colleagues,**

It is my great pleasure and honour, to be here today in the historic city of Istanbul which is the meeting point of continents; to share some of my thoughts with you on **Sustainable Precast Concrete Industry** on behalf of Turkish Precast Concrete Association as former chairman of the association. First, I should present my warm thanks to congress scientific committee and BIBM chairman Mr. Gür Coşkun, for giving me this valuable opportunity. I also would like to extend my personal appreciation to the host country institutions and sponsors, finally to all the eminent professionals, who made this congress worthwhile happened with your kind attendance and contributions.



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**BIBM 2002  
istanbul**

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*Towards Innovative and  
Sustainable Precast Concrete Industry*

**“GOOD MORNING”**

**on  
Sustainable Precast Concrete  
Industry**

**Dr. Ersin ARIÖĐLU**  
May 2002

*E.Ariođlu*

Mayıs 02 / E.Ariođlu / AS-Konkretörler / BIBM, 17<sup>th</sup> International Congress of the Precast Concrete Industry

*Dear Colleagues,*

We are living in an era where the rate of accumulation of **knowledge** increases. In fact, man-kind is creating an entirely **new civilization**. Rapid developments in computer, communication and transportation technologies, especially together with developments in all kinds of **manufacturing technologies**, not only create an increase in the world wealth and trade volume, but also they make markets more interdependent to each others. By the end of the last century, **annual** world trade volume, reached 14 trillion US dollars, which was less than one trillion in 1950's. Also **daily** monetary transactions exceed 3 trillion US dollars to finance government treasuries, goods, debts, projects, company shares, salaries, and at the same time smuggling of arms, drug flow and terrorist actions. To solve the conflict in this **extremely** contradiction is the main duty of the mankind and a vital challenge for **the new born civilization**.



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*Towards Innovative and  
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Artist: Güngör Taner (1997)

**New Civilization**

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*E.Arioğlu*

**Dear Colleagues,**

Today, in our planet 6 billion people from 6.000 different cultures, live under 266 different flags. However they are divided roughly in 3 segments. The most deprived segment of approximately 1.2 billion people can benefit from only 2% of the global wealth. Those people travel on foot and their living conditions are extremely difficult and there is no infrastructure and mostly no shelters. The next layer of 3.5 billion people can travel only by bicycle and bus. They are living in very crowded cities with mostly insufficient infrastructures and shelters. The third layer consisting of the remaining 1.6 billion, have access to everything available on earth. They have or consume 80% of global wealth or resources. To deal with all the problems caused by this gap, such as over population of the cities, energy depletion, environmental abuse, wasteful military spending and irrational consumption, we need to increase our **knowledge** on **sustainable development** as well as on the **ecological capacity** of our universe for achieving continuous harmony.



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Artists: Judy Fraley & art students, USA

Mayıs 02 / E.Arioglu / AS-Konferanslar / BIBA, 17th International Congress of the Precast Concrete Industry

**E.Arioglu**

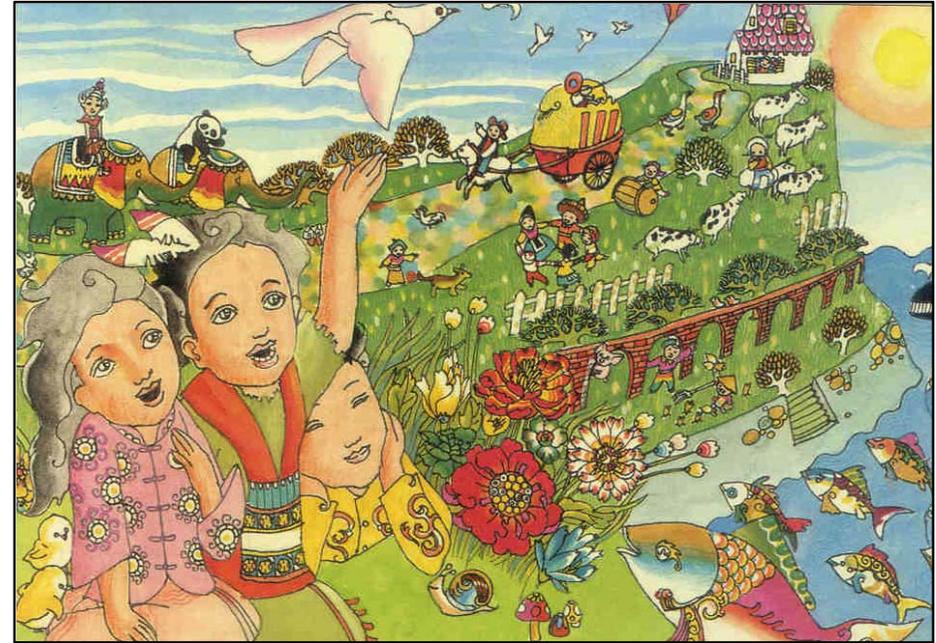
*Dear Colleagues,*

Our knowledge of the universe is incomplete, and it is even defective. In fact, it can never be perfect; therefore it is impossible to create any man-made work, organization or decision free from defects and errors. We can however aim for the realization of the second best choice: To create a system totally open to **sustainable development**. We have to be satisfied with this, because there is no higher choice. Only in such a system, we can examine theories, politics, decisions, designs, all works of man-kind and therefore achieve progress and well being for all. All of the man-made works can be accepted as proper or right solutions during a certain period of the process or service time. These are **favorable defectives** which deliver benefits to the system at the beginning. To extend the profit period is dependent on finding out the defects, errors and incomplete knowledge in the system and it is very closely linked to their enhancing or avoiding time. After some time, even enhanced works will surely expire and become useless, unacceptable or unsustainable.



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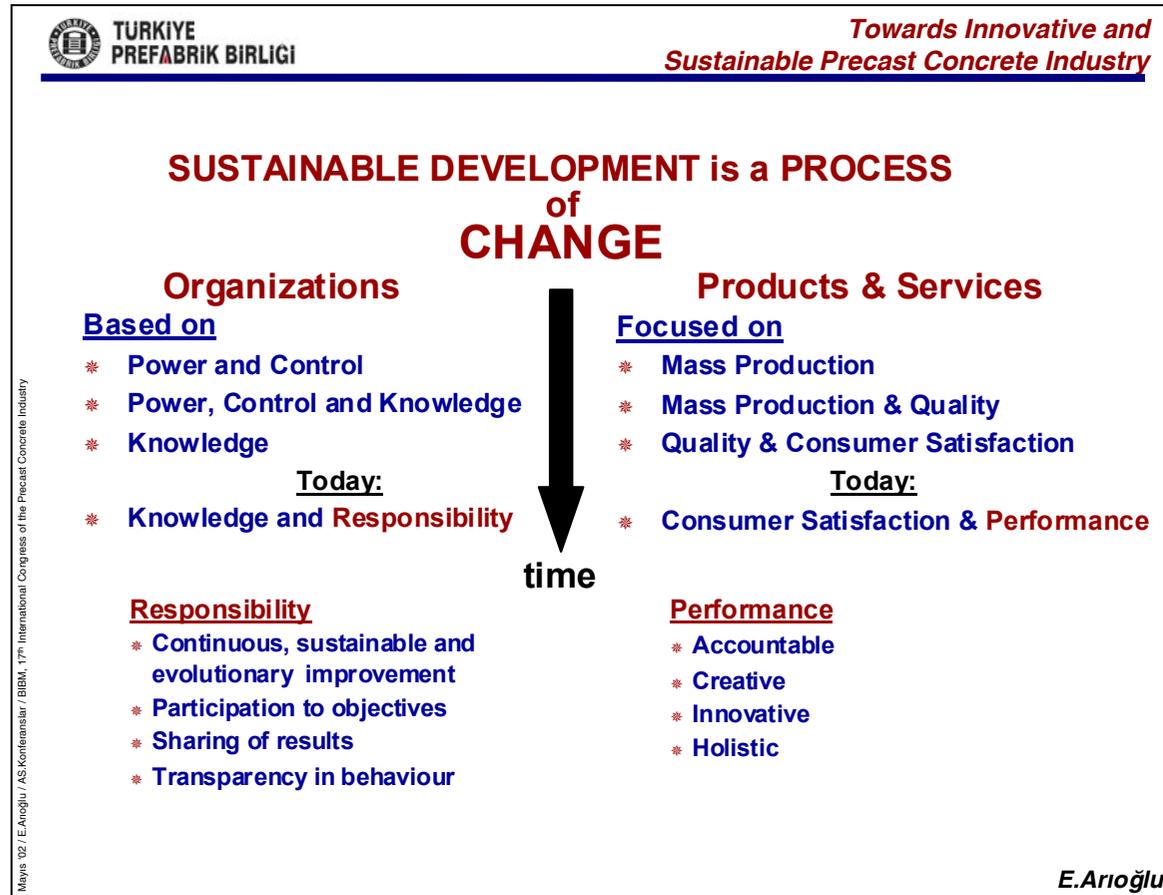
Artist: Wong Nai Kei

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*E.Arioglu*

Dear Colleagues,

Indeed, sustainable development is not a fixed state of harmony; it is rather; a **process of change** in which the direction of investments, the orientation of technological development, the utilization of resources and organizational change are made consistent with current and future needs. Especially organizational change is very important, since all of the other changes will be implemented through management of the organizations. The new-born civilization has been witnessing a decline in all power-based organizations such as nation-states and control-based corporations; while the importance of knowledge-based organizations has been increasing.



*Ladies and Gentlemen,*

Even today, many organizations are transforming themselves to **knowledge and responsibility based** corporations for improved **performance**. This kind of organization therefore requires that all members of the organization take responsibility for performance, objectives, contributions and indeed, behaviors as well. It implies in the management that there are no **subordinates**, there are only **associates**. In this respect, the job of management is not to make everybody a boss; the task is to make **contributors** instead of **workers**. Since it is impossible to avoid all defects in the man-made works, the knowledge-based organizations have to be always **skeptical** about their decisions. That is why, they develop special methods that solve problems and continuously improve their decisions. The essence of these methods is to consciously keep **skepticism** on processes, to reach **experience**, to get benefit from **intuition** and to **focus** on the subject.



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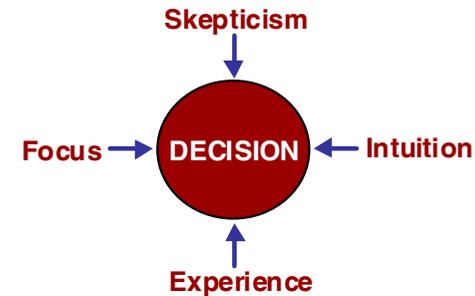
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## PRECAST CONCRETE ORGANIZATIONS

### \* Should be Based on Knowledge & Responsibility

- \* Expert in the process of Knowledge Production
- \* Concern about planet resources and environmental impact
- \* Quality in Results
- \* Focus on Customer Satisfaction
- \* Transparency in Behaviors

### \* Accountable, Creative, Innovative, Holistic Decisions



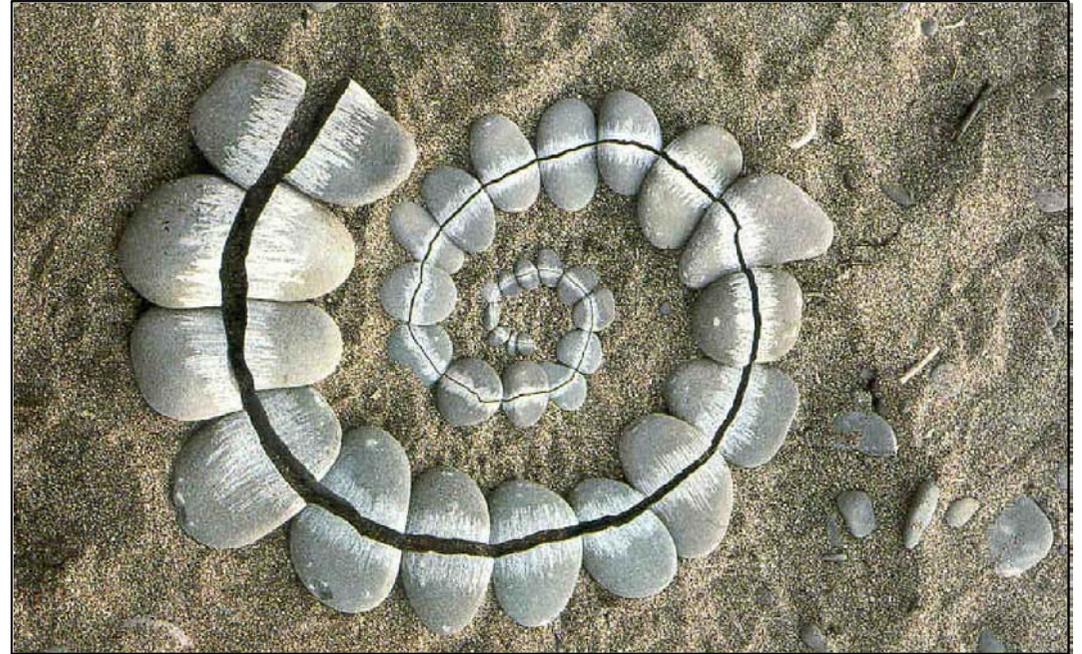
**Ladies and Gentlemen,**

All the members of a knowledge-based organization such as executives, engineers, accountants etc., should be named as **knowledge-masters**. Today managers or knowledge-masters; in other words **management team**; make decisions, it means, they produce **values**. They put together several sources and components following a complex collection of rules and transform them into a more valuable and more beneficial element. Their aim is to create new value in order to meet human requirements. New element can be an idea, a design, a solution, a precast element or a precast concrete system, there is no difference for process. Therefore, today, management is exactly like an art of **building and shaping**. That is the reason why, like in any other form of art, there are creative ideas, extraordinary integrations and original solutions in management to make the **difference**. It is to succeed in **doing extraordinary works** with **ordinary people**. The management is a real art of **forming the society**.



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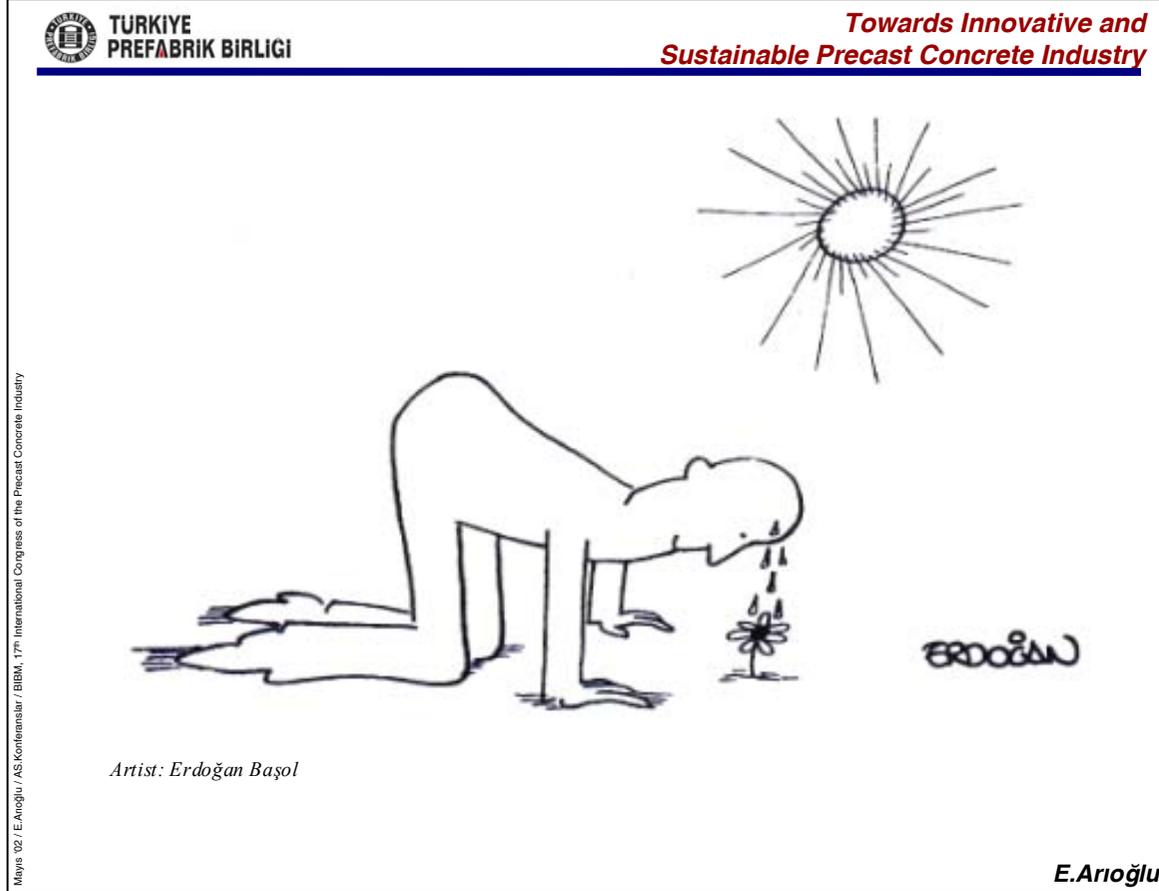
Artist: Andy Goldsworth

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**E.Arioglu**

## *Ladies and Gentlemen,*

A product or a construction work passes through a **design process** before it is produced. This process includes idea reporting, data collecting, determination of needs, research on economic and technical feasibility, concept design, implementation design, detailing, workshop plans and as-built plans. We call **design** the total of that **decision chain** which is the most crucial and essential part of all production process because **an implementation can be only as good as its design-work**. Therefore designers should direct full attention in order to succeed in all phases. **Design** contains mostly technical decisions and solutions. However, the majority of these decisions or their total have socio-economical consequences. Especially in housing projects in precast concrete industry, this matter is relatively more important. In addition to that, infrastructure and housing projects definitely produce national or international political impacts.



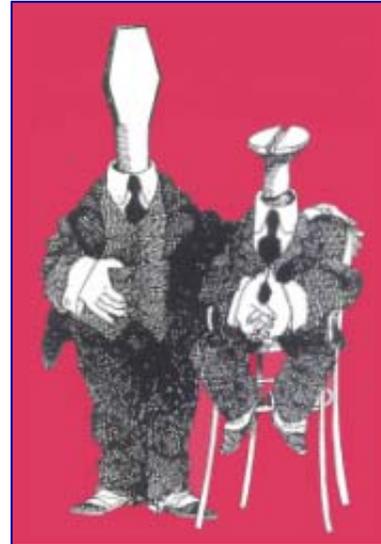
*Dear Colleagues,*

Today precast industry or in other words **prefabrication technologies** represent the most advanced technologies in the **construction sector**. The abstract concept of constructing buildings in parts manufactured in plants and then integrated in job-sites is not a new idea. Historians tell that ancient Egyptians and Romans invented very interesting techniques of construction in parts in addition to modular coordination techniques. What is new today is the possibility of modular desing and mass production through assembly - line which brings guaranteed quality. The Precast Industry, in contemporary sense, was founded at the end of the 19<sup>th</sup> century. The history of the industry certainly follows the history of the extraordinary progress of concrete. Today, concrete continues its outstanding progress and takes increasing part in human life every day.



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**PARTNERSHIP SYNERGY**

## **PRECAST CONCRETE INDUSTRY needs more PARTNERSHIP**

**Industry needs more...**

- \* **Partnership with Contractors / Architects**
- \* **Partnership with Local Government and Universities**
- \* **Partnership with sub-industries**
- \* **Image improvement on sustainability and aesthetics**
- \* **Financing for customers**
- \* **Dialogue with end-users for feed-back**

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*E.Arioglu*

**Ladies and Gentlemen,**

Today, it is clearly seen that; the **most efficient** construction material created by man-kind is **concrete**. Concrete; apart from its weight, is an ideal construction material. Especially in recent times enormous advances in concrete and precast technologies have occurred. Concrete strength at the job site or in the plants reached 120 and 150 Mpa. This value is not the highest achievable with conventional methods. The limits of the current generation of concrete is around 200 Mpa. But, the third generation of concretes with cube compressive strengths between 200 and 800 Mpa with tensile strengths between 25 ~ 150 Mpa and unit weights of 2500 ~ 3000 kg/m<sup>3</sup> are coming which are named **reactive powder concretes**. Researchers are planning to reach this outstanding achievement to create an optimum packing density by using very fine materials; to reduce the amount of water; to add short fibers for ductility and apply pressure and increased temperatures during hardening. Today self - curing and self compacting concretes are easily available. On the other hand **smart concrete** for improved fire resistance with meltable fibers; as well as **smart structures** for earthquake resistance with hardware devices are also in the works.



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## PRECAST CONCRETE INDUSTRY needs more

### Innovation for...

- \* Plant layouts
- \* Test methods
- \* New moulding systems
- \* New infrastructure and housing systems

### Research & Development on...

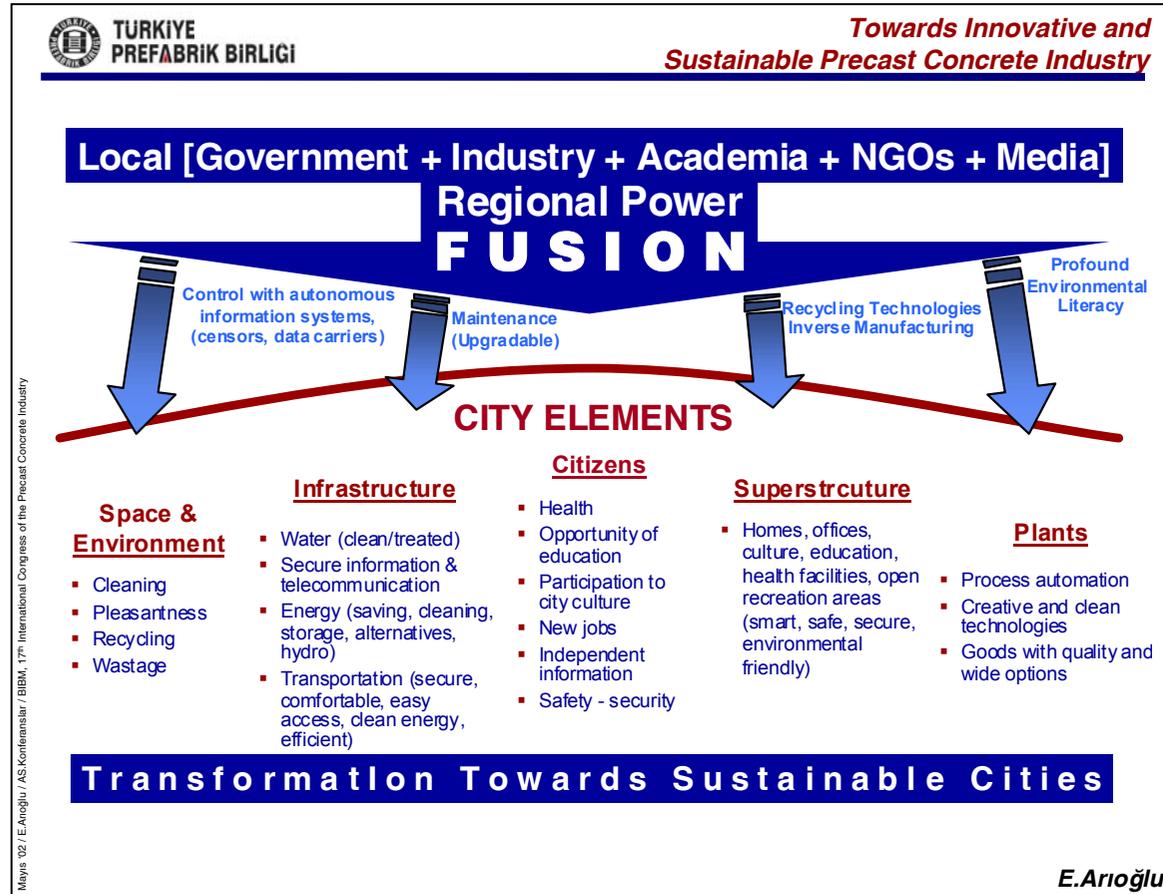
- \* Full-scale tests / Movement resistant connections
- \* Ductility / Durability
- \* Smart structures / Anti-seismic devices
- \* New bearing pads
- \* Fire-resistance / Seismic resistance
- \* Up-gradable maintenance methods
- \* Non-metallic reinforcement
- \* Recycled materials

Dear Colleagues,

The improvements in concrete and steel have played the leading role in the last 40 years of the very positive advances in Precast Concrete Industry. But the dynamics of the improvement have changed as follows:

- \* Environmental concerns
- \* Computer and telecommunication technologies
- \* Demands for better living conditions.

The precast industry does not have a problem with adapting itself to these dynamics. The human capital of the industry with its acquired experience will not have difficulties to respond to this very shaky change. However, the decreasing infrastructure investments and housing demand challenges the local precast industry which performs in a limited economical hauling distance of 300 ~ 400 km. I personally think that **revitalization** of our industry can be possible through a holistic revitalization of the cities. In the process, sustainable cities will be created. The precast industry will revitalize and reform itself while serving this holistic revolution.



### ***Distinguished Guests,***

I would like to conclude my words by presenting basic figures of Turkish precast industry as a sub-sector to construction industry:

- \* The annual volume of the Turkish construction sector is approx. 15 billions USD, which is about 7 to 9 % of GNP (65% of this is housing).
- \* Total volume of international contracts abroad, awarded to Turkish contractors in the last 30 years reached 45 billions USD in 51 different countries.
- \* Turkey produces 40 millions m<sup>3</sup> of concrete yearly; 60 % of this is ready mix.
- \* There, are 30 precast plants in operation belonging to 22 members of the national association.
- \* Established capacity of these plants is 5 millions tons per year.
- \* We expect that Turkish precast industry will grow at a higher annual rate in near future than the construction industry, resulting the need for additional plants.
- \* I believe that Turkish precast industry being dynamic, environment friendly and innovative; it is capable of transforming unhealthy cities to sustainable urban environments very successfully.



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***E.Arioglu***

**Mr. Chairman, Eminent Colleagues,**

Please allow me to conclude my words with an anecdote: One reporter asks to a very famous engineer: «**How did you succeed?**» The answer is very sharp: «**With creative decisions**». The answer of the engineer was not satisfactory for the reporter. Reporter asks again: «**How did you earn these talents?**» engineer answers with one word: «**Experience**». Reporter is still not happy: «**How did you gain experience?**» engineer is very sharp again: «**with defective decisions**».

**Distinguished Guests,**

With these thoughts and feelings, I would like to express my thanks for your kind attention. I present my gratitude to all the authors, for their very sincere efforts to contribute to our industry. Also on behalf of Turkish Precast Concrete Association, I wish a very successful conference in all aspects. Thank you.

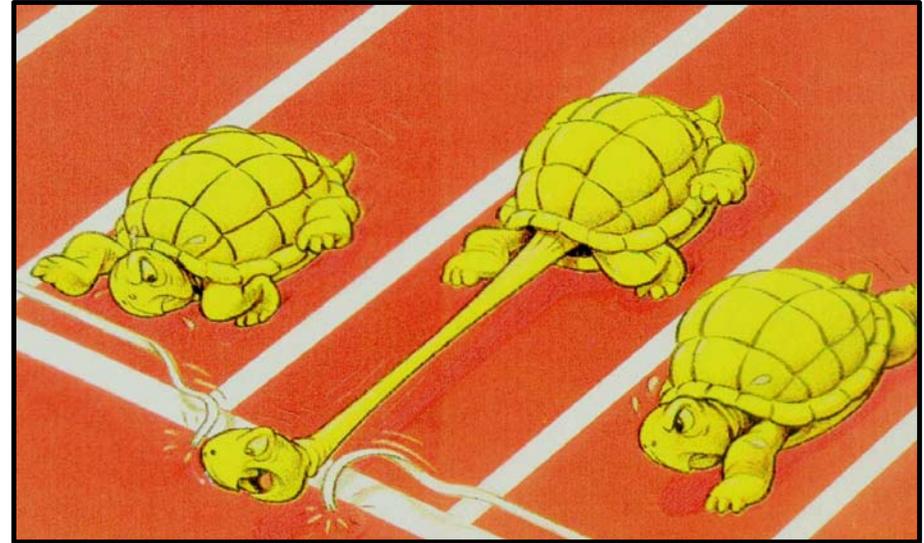
**Ersin Arıoğlu**

*1 May 2002 Istanbul*



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*Courtesy of Mr. Matevz Bambic, Chamber of Commerce and Industry of Slovenia (1999)*

**Precast Concrete Engineering means  
Creativity and is a Matter of Intelligence**

**E.Arıoğlu**