

TOYO TIRE TALK

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Technical Service Department Japan
 Technical tips and information that may
 allow you to better serve your customers.



We would appreciate your input, please contact us.
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22nd February, 2002

Subject :

Introduction to the New Technical Centre



Acting as the centre of TOYO Tire's Research & Development division, the main building of our new technical centre has recently been completed. We would like to introduce the features and facilities of this building, as well as the basic concepts of TOYO's technical centre. This should help you better understand the thinking of our technical department.

1. Outline of TOYO's Plans for this Building.

This distinctive building is symbolic of TOYO's growth and confidence. We have worked hard to ensure it has a stimulating environment for our researcher's creativity. At the same time we have employed advanced building techniques, such as seismic isolation construction, to protect against Japan's frequent earthquakes.

2. R&D Centre Layout.

The building is broadly divided into two zones :

- The first zone is for testing and evaluating automotive tires, and is located on the first and second floors.
- The second zone is the research area for automotive tires, situated on the fourth and fifth floors.

Situated between these two areas, and occupying the whole of the third floor, is what we like to call the 'buffer zone'.



Research
Zone (4th
and 5th
floors)

Buffer Zone

Test and
Evaluation
Zone (1st
and 2nd
floors)

Construction details :

- **The Test and Evaluation Zone (1st and 2nd floors).**

Very thick concrete walls have been made to eliminate extraneous noise and vibrations to create a stable environment. This applies to the whole building.

- **The Buffer Zone (3rd floor).**

An intermediate seismic isolation construction system has been used. The Research Zone above (5th & 6th floors) require this isolation construction so as to maintain quietness, a unique and very important characteristic of this building.

3. Facilities.

3-1. Buffer Zone.

The seismic isolation system is constructed from a combination of a natural rubber layer, an elastic sliding layer, and a steel rod damper. All of these have been developed by the TOYO group.

This floor is used to serve customers, and as a product showcase where visitors can examine the seismic isolation rubber layer in-situ, and as a detailed cutaway model.



3-2. Research Zone.

- **Unified Space in a Two Layer Office.**

The Research Office on the 4th and 5th floors is essentially one large open plan room with few partitions and much space. A hall-like stairwell is set in the centre of this room linking the two layers, creating a unified whole. Adopting tough outer walls, and the seismic isolation construction on the 3rd floor, allows very few pillars to be used, further promoting the feeling of unity between the two layers.



• Quiet Space.

The office employs special heat isolated double glazing, including a vacuum space, which reduces noise intrusion and creates a low-energy room.

• Space for Mutual Communication.

There is a meeting space in the stairwell at the hall centre where staff from all divisions can meet together, exchange ideas, knowledge and information, and offer encouragement to each other. This helps the office run more efficiently and effectively, and generates creative and innovative solutions.

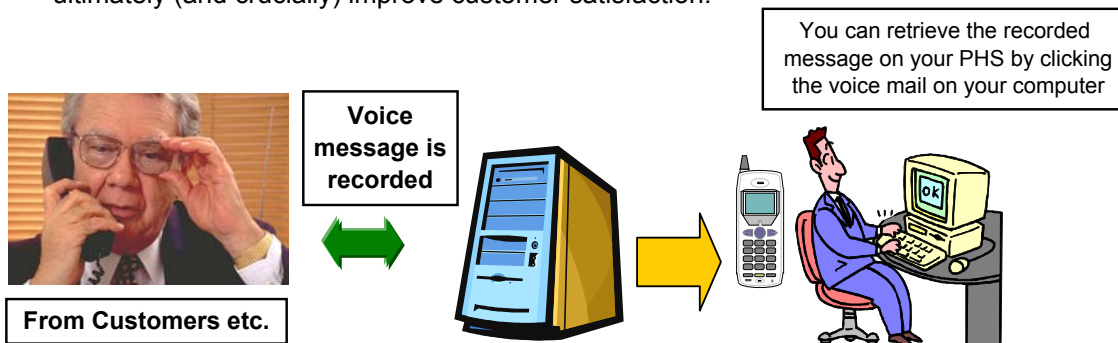
Such a space provides for an integration of information and human resources, helping inspire technical innovations!

4. IT Infrastructure.

The new Technical Centre is equipped with a highly advanced IT infrastructure. All staff are provided with their own computer, but they also receive their own PHS (Personal Handyphone System) numbers as well.

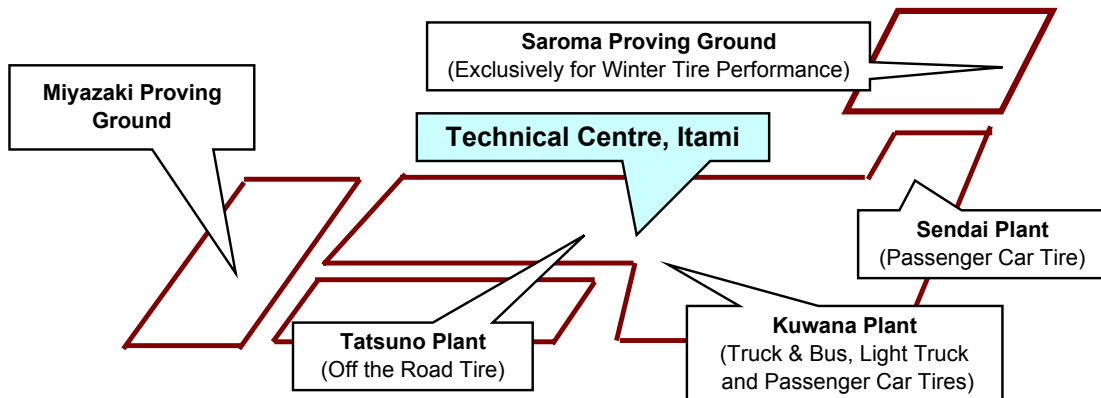
Local area PHS combined with a voice mail service avoids phone calls interfering with continuous work or a vital train of thought. Having a direct line means colleagues are not interrupted by the need to answer your phone, and this system can also record a voice message direct to your computer. This enables you to concentrate on a task without missing important calls.

We believe that the combination of computer telecommunications and high speed mobile phones will increase the development of our staff's intellectual productivity, and ultimately (and crucially) improve customer satisfaction.

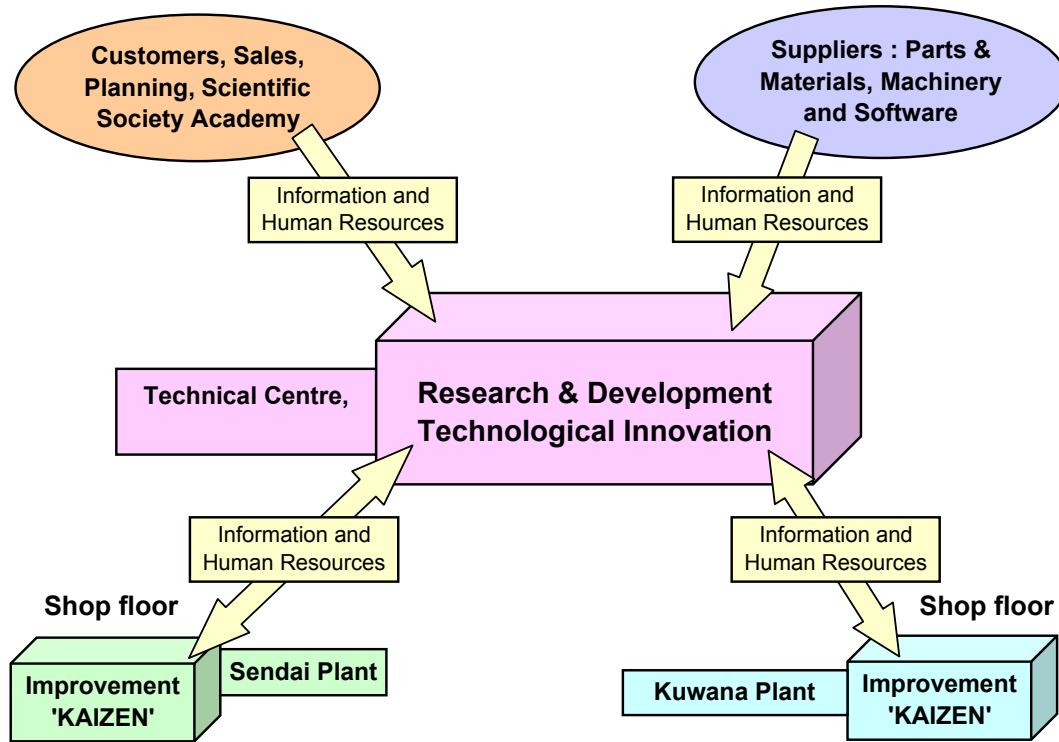


5. Functions and Basic Concepts of the Technical Centre.

5-1. The Bases of TOYO's Tire Technology and Production in Japan.



5-2. Functions of the Technical Centre.



The above diagram illustrates how the Technical Centre integrates Information and Human Resources by the most efficient use of time and space. Technological innovation should originate from the Technical Centre, but for this to effectively happen, the integration of human resources and the management of information is required. This involves :

- 1) Arranging the office so that related specialists, designers and engineers are accommodated in close proximity to each other.
- 2) Deployment of High-Tech IT infrastructure to accumulate time.
- 3) Making positive practical use of computer simulations (TOYO has for years).

5-3. Concepts as a Summary.

The concepts behind the Technical Centre are :

- **Integration of Human Resources and Information.**
- **Density of Time and Space.**

Integration of human resources.
Improved mutual communication.

The office in an well-hole style (4th/5th floors) accommodates the entire technical division.

Accumulation of information.
Fully utilise IT technology.

Computer Simulation. Computer Network Integration.

The new Technical Centre appears certain to reinforce TOYO's core message of 'Superior Products and Services'!