

# IT Grand Plan 2030

## <Plan Outline>

### (1) Innovations in Engineering Capabilities due to AI Design

The aim is to create the ability to optimize the layout of the plant, to automatically select equipment and innovative generative design of process equipment. For these purposes, the reinforcement learning and generative design capabilities of AI will be used. In addition, the knowledge of senior staff will be made into explicit rules so that the engineering check work will be made automatically.

### (2) Project Digital Twin and Simulation (Future Prediction)

In the near future, engineering companies will deliver to customers not only the actual plant but also the “digital twin” model in digital space. JGC will also implement digital twins of entire projects and use them to make forecasts and decisions regarding future developments.

### (3) Dramatic Improvement at Construction Sites as a result of 3D Printers and Automization of Construction

The automation of construction sites, the use of robots, the introduction of large-scale 3D printers and the development of new materials will bring about a dramatic shortening of the lead time from engineering to construction.

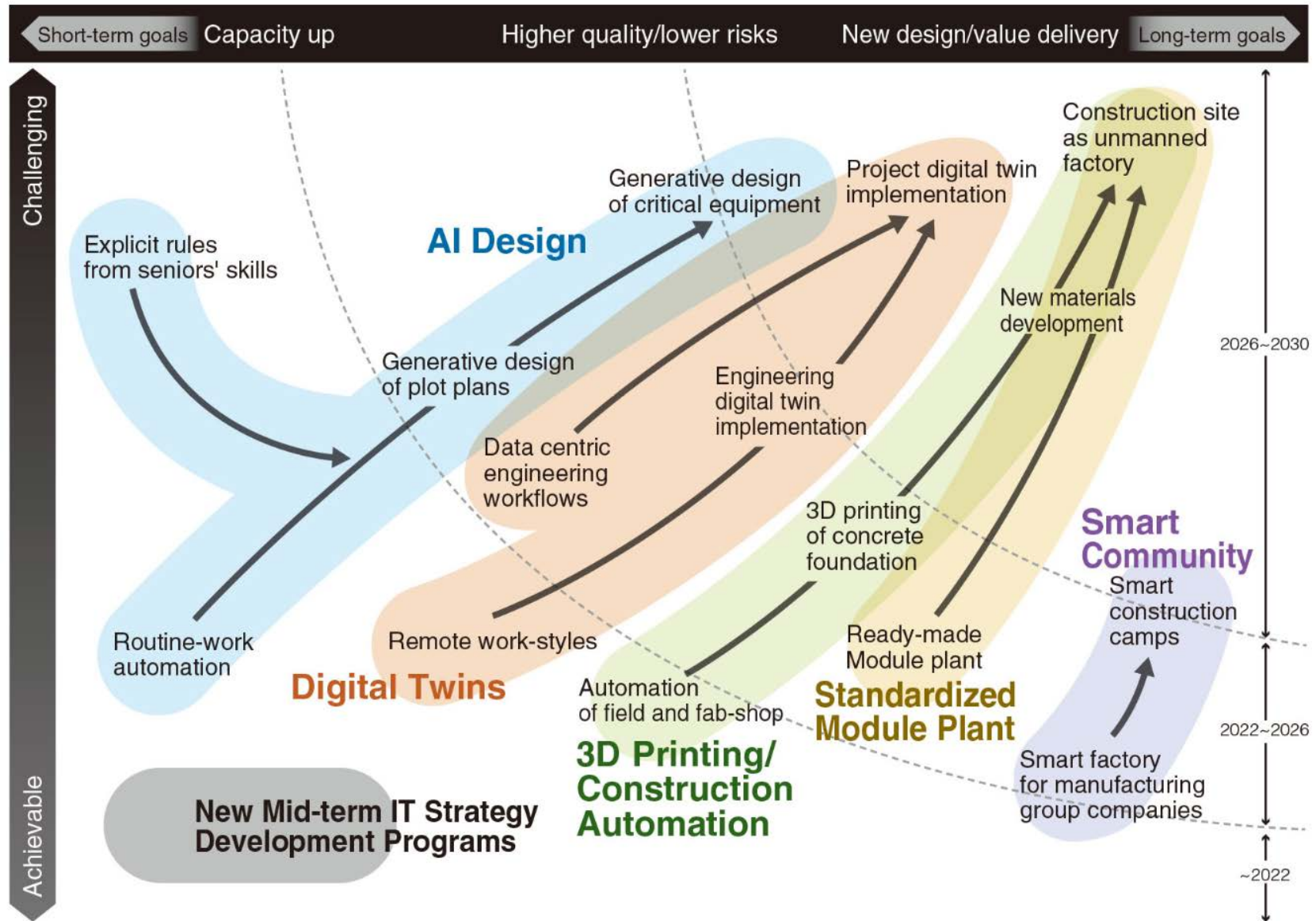
### (4) Improvement of Productivity through the Use of Standardization and Modular Constructions Methods

Instead of designing plants from scratch each time, using standardized designs and modular construction will enable us to raise the level of productivity of our engineering, procurement and construction, making it possible to deliver projects in a much shorter time.

### (5) Development of Smart Community Technology

Making smart factories with IoT for manufacturing companies in the JGC group is the first step of this innovation. Such technical expertise will also be applied to construction camps. The final goal is to attain the capability to design and build smart infrastructure both in Japan and overseas.

# <IT Grand Plan Roadmap>



In the chart, the horizontal axis at the top of the figure indicates the target of activities, while the vertical axis shows the difficulty level of the activities from high to low of each innovation program.