Accommodating population growth in India

Dholera Special Investment Region: smart city megaproject
India faces a problem.
With an urban population set to rise by more than 400m by 2050...

Population size
The urban population of India has increased from 25.85 million in 1901 to 377.11 million in 2011\(^1\)

Urban population
Between 2014 and 2050 the urban areas are expected to grow by over 400 million people\(^2\)

\(^{1,2}\) Nandy, S. N. "Urbanization in India – Past, Present and Future Consequences".
and many of its biggest cities already struggling with overpopulation...
...where will these 400 million people live?
India has developed an ambitious plan...
...the Delhi – Mumbai Industrial Corridor (DMIC).
Spread across 2,700km, the project will cost $100 billion and includes the construction of a new smart city which will have a footprint of 920km².
That’s twice the size of Delhi.
It’s known as the Dholera Special Investment Region (DSIR).
The first phase of the smart city covers 435km². It’s being built by TATA Consulting Engineers Limited (TCE).
TCE is responsible for building all of the infrastructure for the city – including...
Roads and highways

Railways

Power lines

Flood control and drainage measures

Sewerage

Water supply
Overseeing a project as important and expansive as the development of a whole city is massively complicated.

Every decision will impact the lives of millions.
Let’s take roads as an example.
Every change in road layout impacts:

- Traffic
- Placement of utilities
- Industry supply chains
Using Civil 3D, TCE engineers have built 3D models of 180km of roads and highways.
Which means they can easily assess different design decisions.
Using Navisworks, they’ve been able to detect hundreds of different problems before construction...

...that traditional 2D tools would’ve missed.
But that's just one piece of the puzzle. Every aspect of the city has been designed to promote sustainability and efficiency, and improve life for inhabitants.
Let’s look at another example.
The DSIR will be built on a flat, low-lying plain.
Which means water has been a huge consideration in the design stage.
Using AutoCAD Map 3D, TCE created contour maps of the region.
Using Civil 3D to analyze surface watersheds and map floodplains...

...TCE designed effective flood defences.
But that’s not all.
DSIR is too large for water lift stations to provide the required output.
Instead, TCE decided relocating nearby soil to create a slope was the best option for overcoming challenges posed by the flat surface.
With BIM, TCE is making more intelligent decisions, faster.
Projects of this scale require a suite of software capable of...

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<th>Providing up-to-date and accurate information to everyone involved in the project, across a multitude of AEC disciplines</th>
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<td>Integrating building information modelling (BIM) with geographic information systems (GIS)</td>
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- Integrating building information modelling (BIM) with geographic information systems (GIS)
- Handling the enormous data sets involved with a project of this scope
Projects of this scale require a suite of software capable of...

3/5 Handling the enormous data sets involved with a project of this scope

4/5 Managing timelines and budgets to ensure deadlines
Projects of this scale require a suite of software capable of:

| 4/5 | Managing timelines and budgets to ensure deadlines are met |

- Identifying potential conflicts and errors before construction begins
- Handling the enormous data sets involved in a project
Projects of this scale require a suite of software capable of...
When it’s complete, the city will stand as a testament to the hard work of the team at TCE...
...and the importance of a single, integrated platform that provides a holistic view of projects.