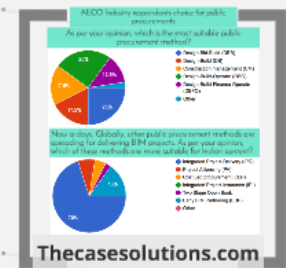
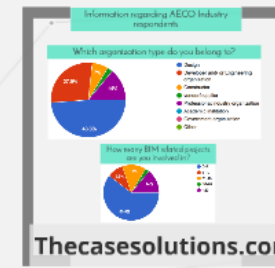
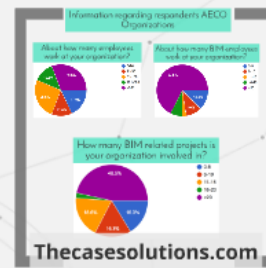


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 International Representative, Zigurat
 Global Institute of Technology



- Four Indian AECO Organizations delivering BIM in Projects**
- AECOM
 - Atkins
 - Arup
 - Mott MacDonald
 - Hochtief
 - RSP
 - Ramboll
 - Larsen & Toubro
 - Neilsoft
 - Space matrix, etc.
- Thecasesolutions.com**

Road blocks to BIM Implementation in India

Solution from AECO Industry & IT Academia related factors

Category	Technical Barriers	Project Barriers	Education & Training Barriers
AECO Industry	Expensive software	Client/owner limitations	Lack of BIM education & training
	Hardware requirements	Lack of people on grounds BIM education from other team members	Skill issues
Academia	Standard practices	Lack of trained workforce to operate BIM tools	Organizational efforts
	Legal Barriers	Work practices & process	Conceptual Barriers
IT Academia	Software & copyright issues	Roles & responsibilities	Financial
	National level guidelines	Change in practice & use of information	Capital for investment
Government	Third party dependence for accuracy of standards	Self-paced regulations	Key indicators of BIM adoption will not get implemented
	Professional bodies	Technology Roadmap	Need for existing Indian government BIM standards
Government	Process of embedding BIM in AEC curriculum	Need of BIM IT laboratory facility	Need for existing Indian government BIM standards
	Pressing for issues in delivering BIM	Need of BIM technical officers	Key indicators of BIM adoption will not get implemented
Government	Initiative in embedding BIM in general	Need of standards/guidelines for BIM tool selection	Need for existing Indian government BIM standards
			Key indicators of BIM adoption will not get implemented

World BIM market - top impacting factors

2015
 High cost of BIM software.
 Lack of trained BIM professionals.

2022
 Enhanced productivity through interoperability.
 Growing concern about energy & efficiency.
 Government mandates for BIM.

Demography of Indian Population.

65% of the population is under 35 & half of the Indian population is about the age group of 25 which represent India an amazingly young country.

226 Million are in the age group of 10 to 19 entering higher education. It's a positive sign wherein rest of the world is aging.

By 2020
 the average age of people in Japan is going to be 47, china heading towards 40, Europe-46 & USA-40. Where as in India is going to be 29 which means we have potential people who are productive & dynamic young population ready to work & transform the world.

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 Mr. Sunil Joshi
 Vice President, Neilsoft
 Responsible for Neilsoft BIM & AEC consulting business



Active members, India BIM Association.
 Raj Modi, Sohail Hasan Rizvi, Dibyendu Biswas, Amrutha Ajithan, Soumo Bose, Nirbhay Chauhan, Gokul Easwaran, Rikrey R Marak, Hamsaja Harish, Sudheer Sirangula, Niranjan Kumar, Ar Puneet Arora, Nuthan Dummehalli, Apurba Sinha Roy, Vishwanath Gundakalle, etc.



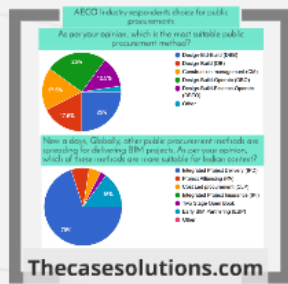
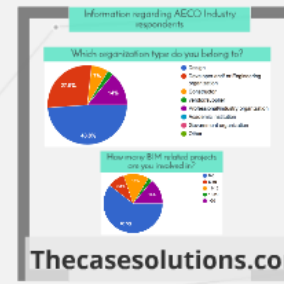
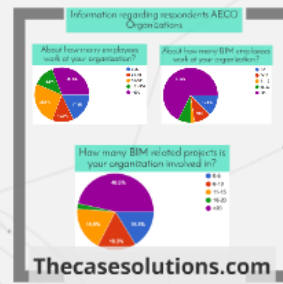
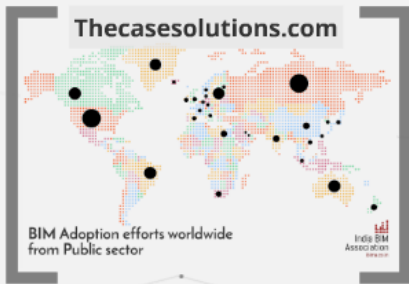
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Road blocks to BIM Implementation in India

Selects from 45 Industry & Stakeholder related factors

Technical barriers	People barriers	Education & training barriers
Expensive software	Clear career trajectories	Absence of BIM education & training
Hardware requirements	Low importance towards BIM adoption	Skilled resources
Standard guidelines	Lack of incentive mechanism to upgrade BIM tools	Organizational efforts
Legal barriers	Work practices & process related barriers	Commercial barriers
Liability & copyright issues	Skills & experience limitations	Insurance
Third party dependence for accuracy of BIM data	Change in practice & use of information	Capital for investment
Third party dependence for accuracy of BIM data	Insufficient regulatory	Hyper-adoption of BIM (implementation will not get transactional & fit)
Policy related barriers	Technology related barriers	Process related barriers
Process of introducing BIM in AEC organizations	Need of BIM? Mandatory facility	Need for training & holding incentives
Business systems to deliver BIM contribution	Need of BIM in use of all BIM	Need for BIM in use of all BIM
Initiative in producing trained BIM personnel	Need of standard guidelines for BIM tools & facilities	Need for BIM in both end users & personnel in construction

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Source: Building Information Modeling (BIM) Market to 2022, Global, Strategic Business Insights, Grand View Research, Inc. (2015)

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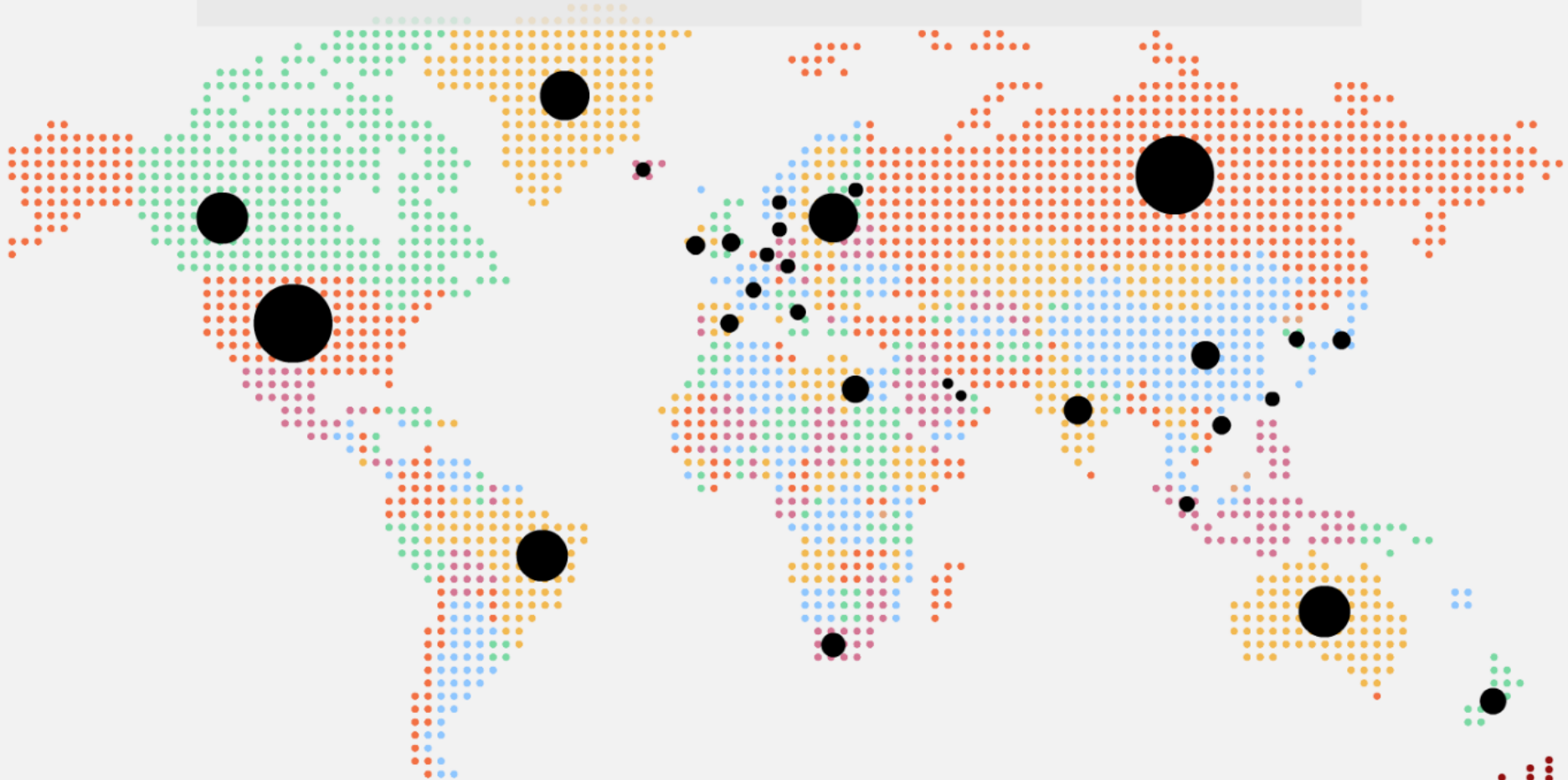


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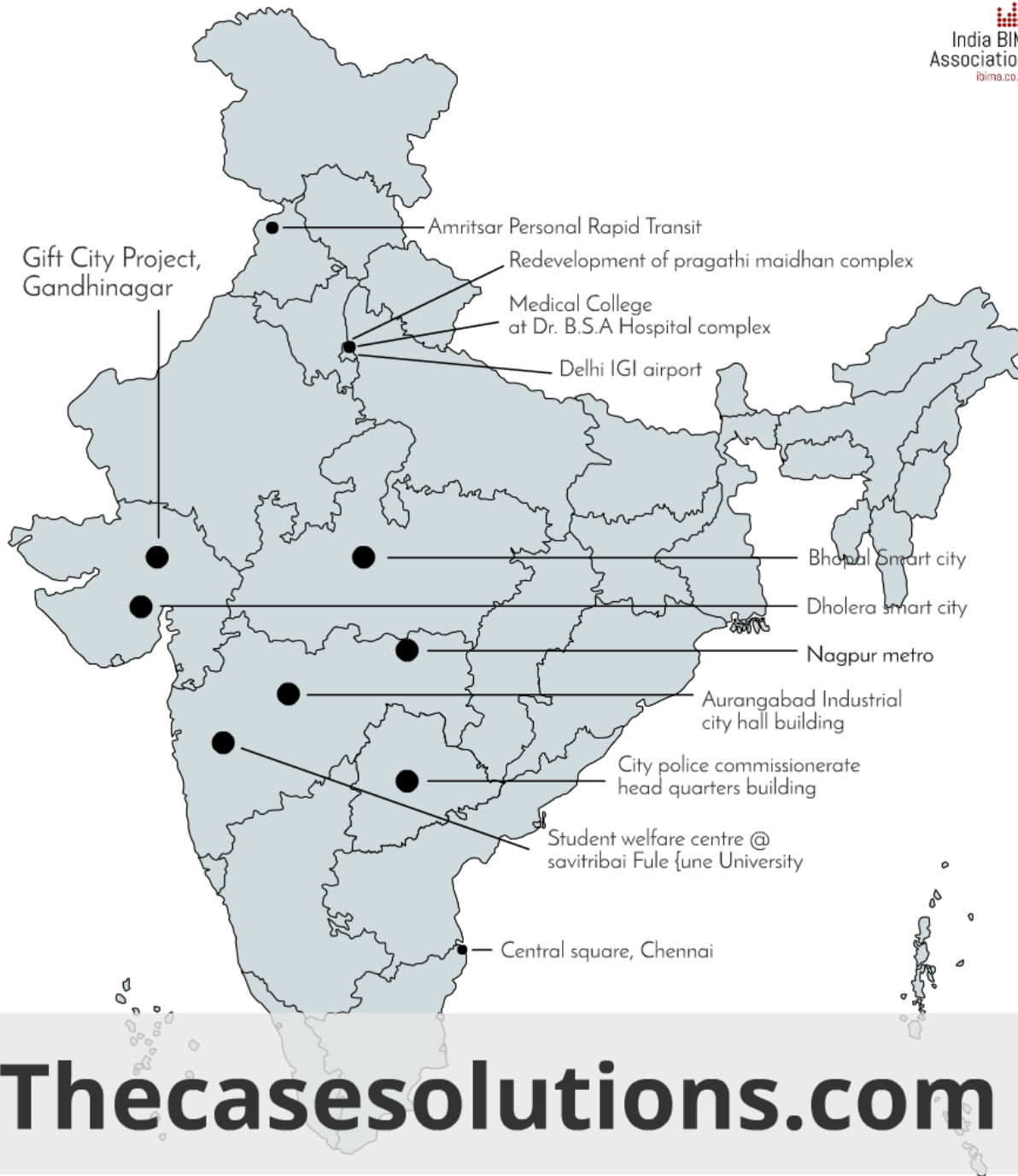
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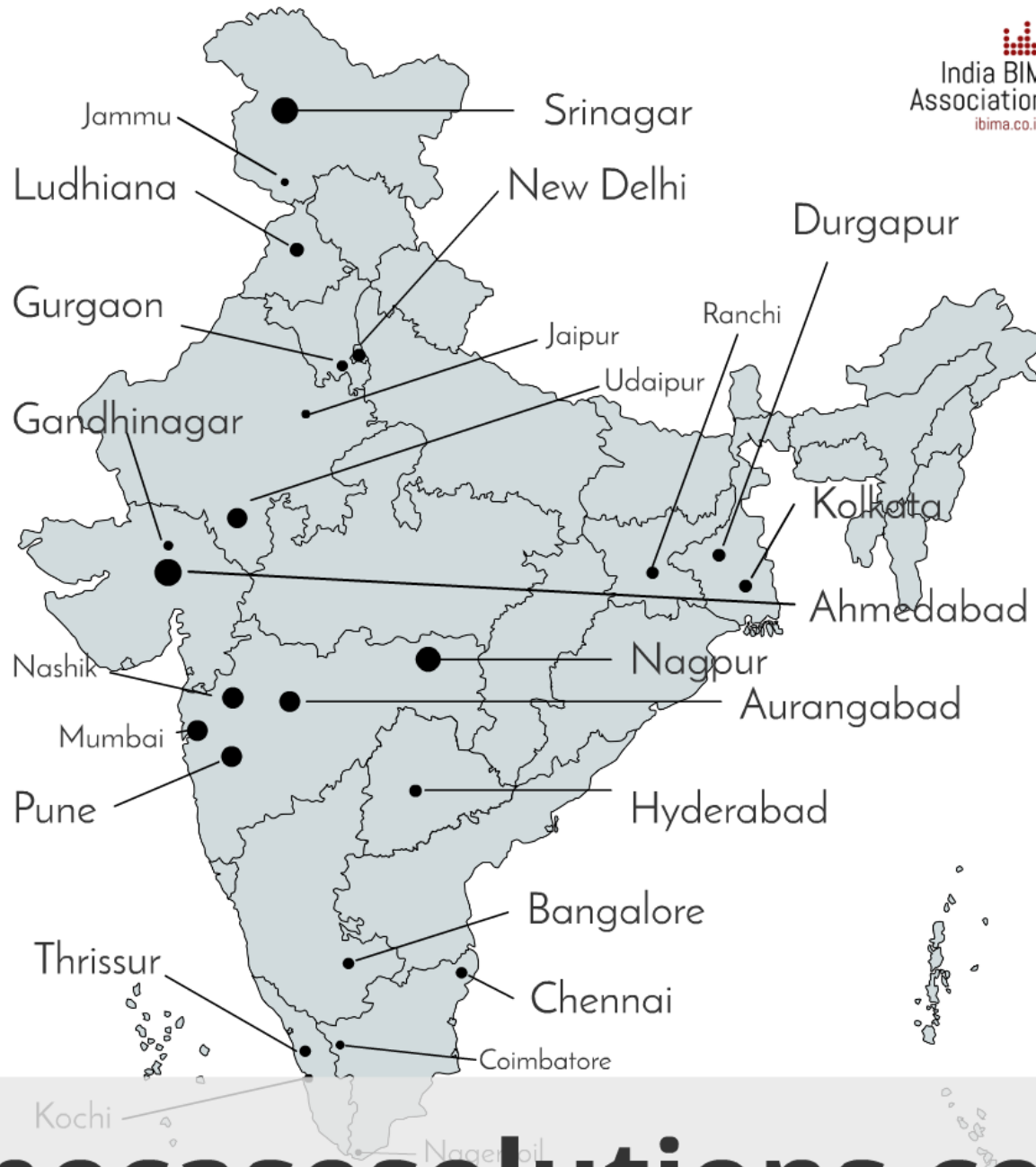
BIM Adoption efforts worldwide
from Public sector

High profile BIM projects



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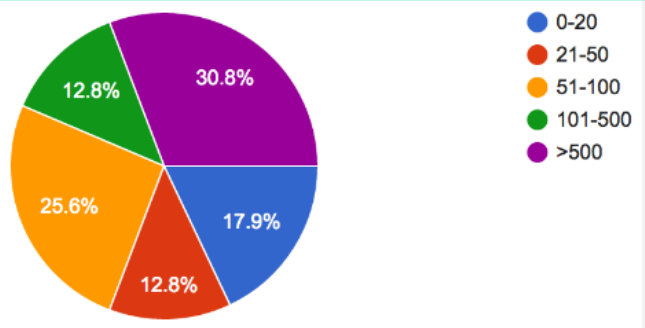
Questionnaire respondents



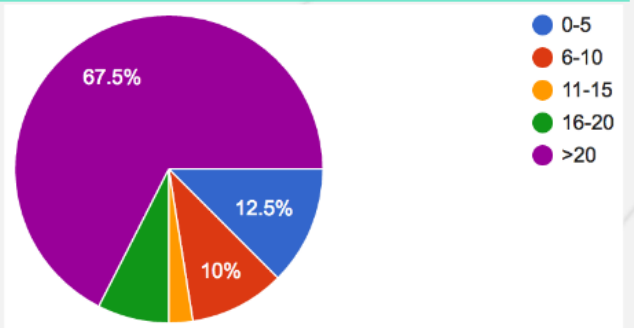
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Information regarding respondents AECO Organizations

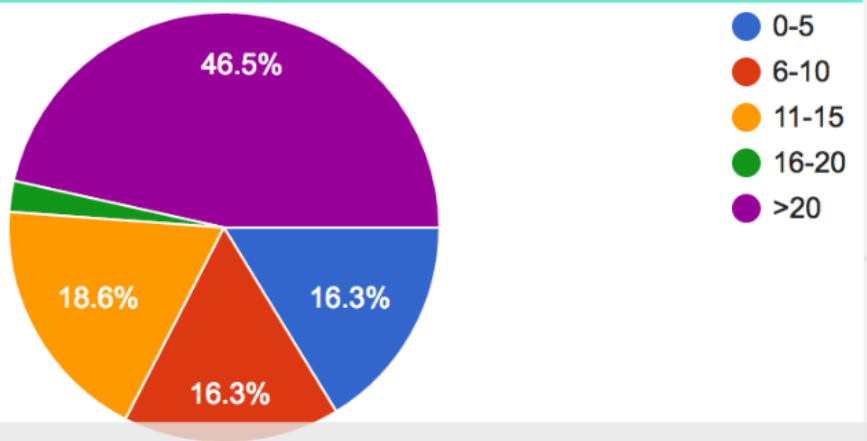
About how many employees work at your organization?



About how many BIM employees work at your organization?

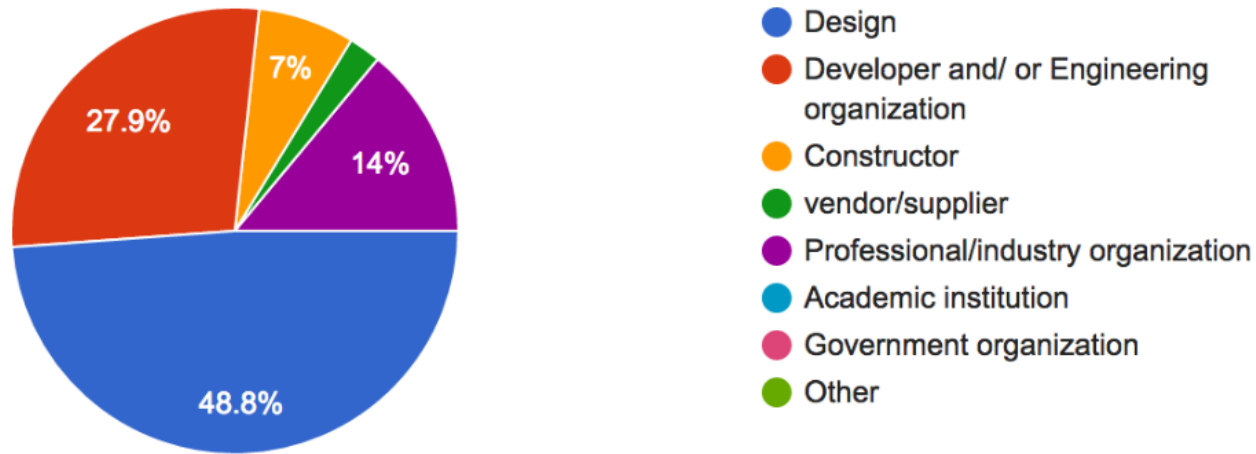


How many BIM related projects is your organization involved in?

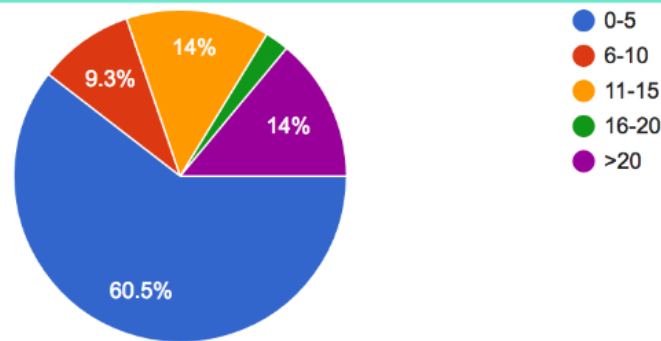


Information regarding AECO Industry respondents

Which organization type do you belong to?

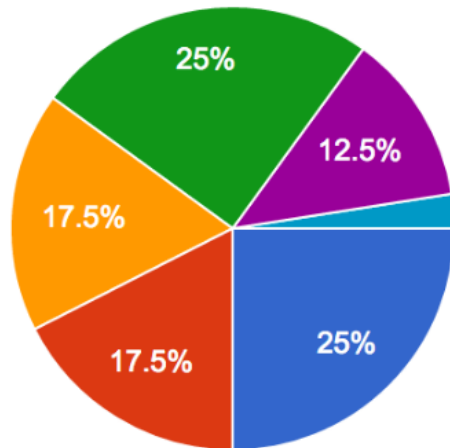


How many BIM related projects are you involved in?



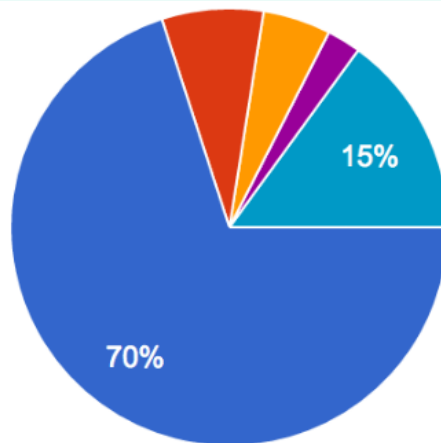
AECO Industry respondents choice for public procurements

As per your opinion, which is the most suitable public procurement method?



- Design-Bid-Build (DBB)
- Design-Build (DB)
- Construction management (CM)
- Design-Build-Operate (DBO)
- Design-Build-Finance-Operate (DBFO)
- Other

Now a days, Globally, other public procurement methods are spreading for delivering BIM projects. As per your opinion, which of these methods are more suitable for Indian context?



- Integrated Project Delivery (IPD)
- Project Alliancing (PA)
- Cost Led procurement (CLP)
- Integrated Project Insurance (IPI)
- Two Stage Open Book
- Early BIM Partnering (EBP)
- Other

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