

SURVEYORS in BIM

VISION
PRESENTED BY TIIT HION

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Who and What is Tiit Hion

- CEO of Hades Geodeesia, Hades Invest
- BM of Estonian Cluster of Digital Construction
- Qualified Surveyor - EQF level 7

What is BIM?

Building Information Modelling? Management?

Defining of BIM is waste of time - each one has its own understanding

Sure that all the others have different understanding than You

You have to define it with-in the context every time

CLASSIFICATION of CONSTRUCTION

Dimensional

- Vertical - houses
- Horizontal - infrastructure, connecting houses

Detail

- Classifications systems UNIClass, TALOT,
- CoClass Int - S, EST, CZ, FIN signed The Letter of Intent on May 28th
- LV, LT??? When?

Why is BIM?

Gross value added per hour worked, constant prices

Index: 100 = 1947



Many sectors have transformed and achieved quantum leaps in productivity; construction has changed little, limiting productivity gains

Key advances, 1947–2010

Agriculture	Manufacturing	Retail	Construction
Leveraged scale through land assembly and automation; deployed advanced bioengineering to increase yields	Implemented entirely new concepts of flow, modularized and standardized designs, and aggressively automated to increase production	Utilized scale advantages and cutting-edge logistics to provide affordable goods to the masses	Limited improvements in technological capabilities, production methods, and scale

SOURCE: World KLEMS; BLS; BEA; McKinsey Global Institute analysis

CHALLENGES OF CONSTRUCTION

- Low efficiency - low added value compared to other industries
- Huge waste of resources > 50% on sites is waste, most of time is idle
- Low level of digitalisation
- Lot of heavy physical work / Dangers on sites
- Low image in society - low interest to join sector among Youth

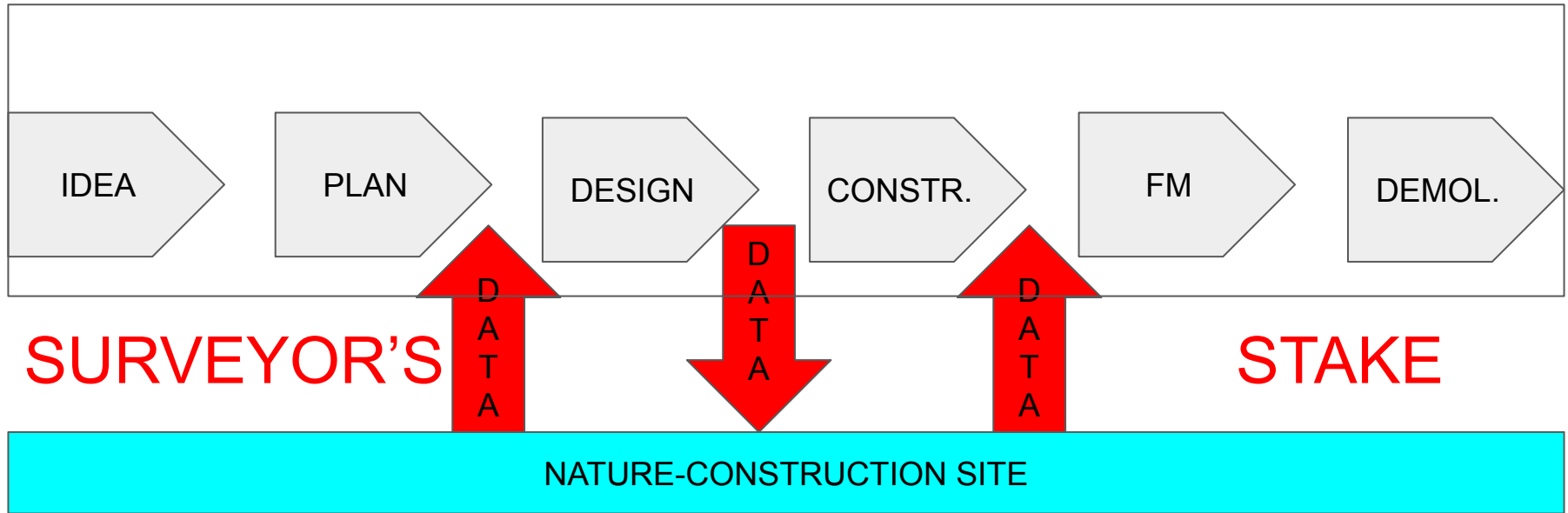
SURVEYOR in CONSTRUCTION

Role of Surveyor in Construction industry

- Data acquisition from nature or site - measuring XYZ points
- Data processing for customer - interpreting point(line)data
- Delivering data to customer - CAD files - site maps, as-built drawings
- Data transforming from design to nature or site (stake out from CAD data) - points on site (permanent marker points)

SURVEYOR in VALUE CHAIN

Surveyor's positions in Construction Value Chain



CHALLENGES in VALUE CHAIN

1. How to get data from digital (3D design) to real (markers on concrete, or details on place) without transforming it to 2D dwg and losing details, time, man-hours.....
2. How to get the built details verified vs design data, how to prove it
3. How to get built details into as-built model for Facility Management
4. How to get data visible and understandable to non-specialist user

OPPORTUNITIES for Surveyors

- From **Field-to-BIM** meaning Data acquisition with minimal man-hours by surveyor
 - Massdata solutions
 - Laser scanning solutions
 - photogrammetry solutions [Monitoring constr site](#)
 - as-built software solutions [Verity](#)

OPPORTUNITIES for Surveyors

- From **BIM-to-Field** solutions meaning stake-out solutions with minimal man-hours by surveyor
 - Simplified Total Stations, GNSS Rovers controlled by Smartphone interfaces [Magnet Construct](#)
 - Augmented Reality
 - Concrete printers, brick laying machines

GLOBAL TRENDS

- Sector is faced to grow in conditions of less labour force
- Lack of residential space - getting worse
- Lack of space for Infrastructure - getting worse
- Traditional Chain type business-model turns into Network type
- Development of social and environmental awareness and pressure
- New types of employment, new trends in employment developing

Thank You for Your time!

If You feel I can be useful: tiit@hades.ee, www.hades.ee

