


Move to **BIM level 3** where only data and processes remain and where  your **data is yours**

data driven construction.io

**CAD (BIM)
data quality**

**Excel
Add-in**

**Data filling
in CAD (BIM)**

**Date analytics
in construction**

**LLM for
CAD (BIM)**

Users Across the Globe are Transforming Insights with Open Data for Smarter, Faster, and More Efficient Decisions

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LLM for
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Dmitri Garbuzenko

BIM and AIM Coordinator | RB Rail AS

★★★★★

With the help of Python and especially the pandas library, as the DataDrivenConstruction team does, we are now able to perform delivery checks four times faster.

With the help of Python and especially the pandas library, as the DataDrivenConstruction team does, we are now able to perform delivery checks four times faster. By turning IFC data into a pandas DataFrame and comparing it with quantification tables or classification databases, we have made our expertise fast and reliable.



Nils Strumberger

BIM-Coordinator | Fact GmbH

★★★★★

The DDC (Data Driven Construction) Excel Plugin is a game-changer, transforming proprietary CAD models into open source data frames for seamless integration and AI interaction.

It significantly improves workflows and offers exceptional value for money by saving time and boosting productivity. Highly recommended for anyone looking to enhance their projects with data-driven insights.



Abdelrahim (Mohamed) D...

BIM Manager | Consolidated Contractors C

★★★★★

DDC converter and Plugin is a fantastic and helpful tool for visualisation and quantification the meta data from Revit. Thanks for sharing such helpful tools!



Prof. Dr.-Ing. Michael Bühler

Co-Owner GemeinWerk Ventures

★★★★★

Be part of the movement with DataDrivenConstruction! Let's make true freedom in data formats a reality and catalyze a new era of productivity and innovation in construction.

The real and necessary journey from closed to "open" formats has not even started: True freedom in data formats—free from proprietary ties and accessible to all—is what we need to unlock innovation and collaboration across the construction industry, particularly benefiting the 99% of construction, i.e. SMEs and unchaining the sector for accelerated growth



Daniel Glober

BIM-Manager | SCHOLZE-THOST GmbH

★★★★★

Revit and IFC reports that used to take me almost weeks to create are now updated in just a few minutes. I was able to quickly understand what the DataDrivenConstruction did and thus extend and modify it to fit projects.

The DataDrivenConstruction team showed me examples of blocks and scripts that can automatically generate PDF, XLSX, and DOCX files that mark errors/defects in the model. Additionally, we also now do automatic checks for IFC structure, file naming, etc.



Jānis Dzenis

BIM Coordinator | Merks, SIA

★★★★★

This is a fantastic tool, haven't seen one like this in a long time. In this era, we have countless tools and methods for creating models, drawings, tables, and other forms of data.

The DDC Excel plugin provides me with the capability to manage information in alternative ways.



Mohamed Touati

Principal Data Scientist at Pixemantic

★★★★★

As a data scientist, I use data every day in every topic and field and think that data can appear in one format to make it easier to use and explore.

After I tried the DDC converter, it became the only solution for me to manage and convert all BIM documents. Thanks to DataDrivenConstruction, I can now work with all IFC and Revit files automatically without having to upload files to the server.



Marie Annette Kittus

BIM Manager | Estareal solutions

★★★★★

DataDrivenConstruction Excel Add-In is a wonderful additional tool to help extract data from CAD (BIM) Revit, IFC, DWG files in order to move forward with information validation processes in your workflows.

As we move forward in the industry it is crucial to think about diversity of data and how to find the most suitable outputs in order to keep said data valuable, up to date and usable.

An influential tool with a user-friendly interface helping the construction industry move towards the future!



Valerio Spini

Settore RVCS

★★★★★

Great experience: Until now, I used to open IFC files in Blocknote to check the parameters and their structure.

Thanks to the DataDrivenConstruction converter I can check the parameters and see their structure directly in MS Excel in an orderly and SMART way, amazing!



Vinod Kumar

BIM Manager | Estareal solutions

★★★★★

DataDrivenConstruction approach is truly revolutionary and has the potential to transform the construction industry. It's amazing to see how you are empowering users to work with structured data in a user-friendly way, leveraging the power of Excel and open-source tools.

I'm sure that your Excel plugin and data management solutions will be a game-changer for construction projects. Keep up the fantastic work!



Irina Fischer

BIM Coordinator | OBERMEYER Group

★★★★★

The decision to use Jupyter Notebook for results verification turned out to be highly beneficial. Our experience with solutions from Data Driven Construction and Jupyter Notebook has been extremely positive.

Overall, the integration of solutions from Data Driven Construction and Jupyter Notebook has greatly improved our workflows. Their combined capabilities and performance have not only optimized data processing, but also produced meaningful results, making them highly recommended tools.



Nicolas Merot

Ingenieur BIM | Caelli Ingénierie

★★★★★

DataDrivenConstruction products revolutionize data management in construction! Their IFC and RVT to Excel converters enable smooth data analysis and extraction, optimizing project management and documentation.

A powerful, user-friendly solution for construction professionals

automate the verification process

CAD (BIM) data quality

data driven construction.io

Move to BIM level 3
Your data is Yours

Challenges

- Poor quality data**
Errors in models and parameters can lead to significant financial losses.
- Integration complexity**
Integrating data from different sources and formats requires significant resources.
- Closed data formats**
The use of proprietary formats makes it difficult to access and process data.

Objectives

- Ensure high quality of data coming from CAD and BIM systems**
- Reduce errors and inconsistencies in models**
- Improve the process of data integration and processing for later use**

Solution

- Data conversion**
Provides easy access an processing of data
- Open Data Formats**
Use granular, structured data for simplified data integration
- Process Automation**
Use Python and LLM to validate, analyze data

5 STEPS FOR ENSURING QUALITY OF CAD (BIM) DATA

- 01 Parameterization of the task
- 02 Creating validation rules
- 03 Fully automatic quality control
- 04 Fill the model with the right data
- 05 Presentation of verification data



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info@datadrivenconstruction.io

- no API needed
- no file based
- no hidden fees
- no internet needed
- no limitations
- no quality loss
- no plugins
- no subscription
- no CAD-BIM needed

- BIM level 3
- granular data
- open data
- unified
- DataFrame
- LLM
- analytic
- open source tools
- data-driven decision
- structured data
- pipelines

streaming check within seconds

Checking the quality

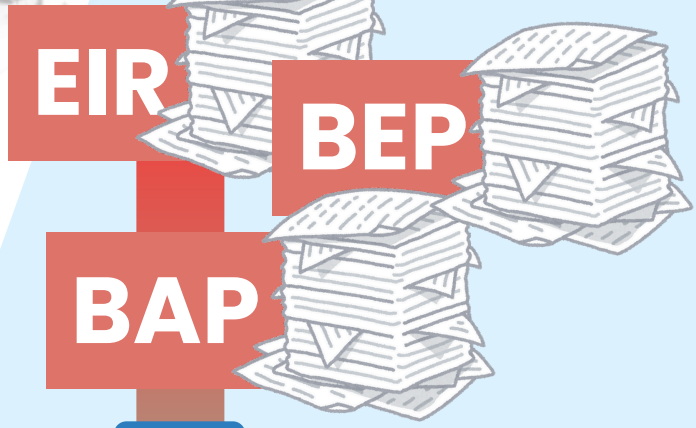
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Move to BIM level 3
Your data is Yours



unified
structured data
granular data

project data



unified
structured data

check rules



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Excel Add-in



FUNCTIONAL APPLICATIONS AVAILABLE IN THE DATADRIVENCONSTRUCTION PLUGIN FOR EXCEL

Your Bridge Between Excel and CAD (BIM)



Hide Columns



Remove Filters



Project Geometry



Visible Rows



Selected Elements



Change Colors



Change Transparency



Add BBox Data



Check Duplicate



QTO Table



CO2 Emissions



Check Parameters



Create Dashboard



Comparing Versions



Merging Projects



Export to CSV



Export to JSON



Export to XML

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Data filling in CAD (BIM)

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Move to BIM level 3
Your data is Yours



converter
DDC
data export

plugin
API
model filling



- ### Benefits
- Data Security**
Data is under complete control and accessible without third-party vendors
 - Interoperability**
Interoperability between different systems, regardless of their origins
 - Improved Collaboration**
Collaborate in real time with open data and tools
 - Scalable Solutions**
Solutions that easily scale to any project size
 - Cost Efficiency**
Reduce costs by utilizing free and open source tools



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build smart, build precise

Date analytics in construction

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Move to BIM level 3
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Key Benefits



Improved Project Planning

Data analytics enable predictive modeling for better accuracy in timelines and budgeting



Efficient Resource Management

Optimize allocation of materials, machinery, and manpower with real-time data



Risk Mitigation

Advanced analytics help identify potential risks and devise proactive strategies to mitigate them

Our Approach

Data Integration

Seamless aggregation of data from various sources including BIM, CAD, and IoT devices



Custom Analytics Solutions

Tailored analytics frameworks that align with specific project needs and goals



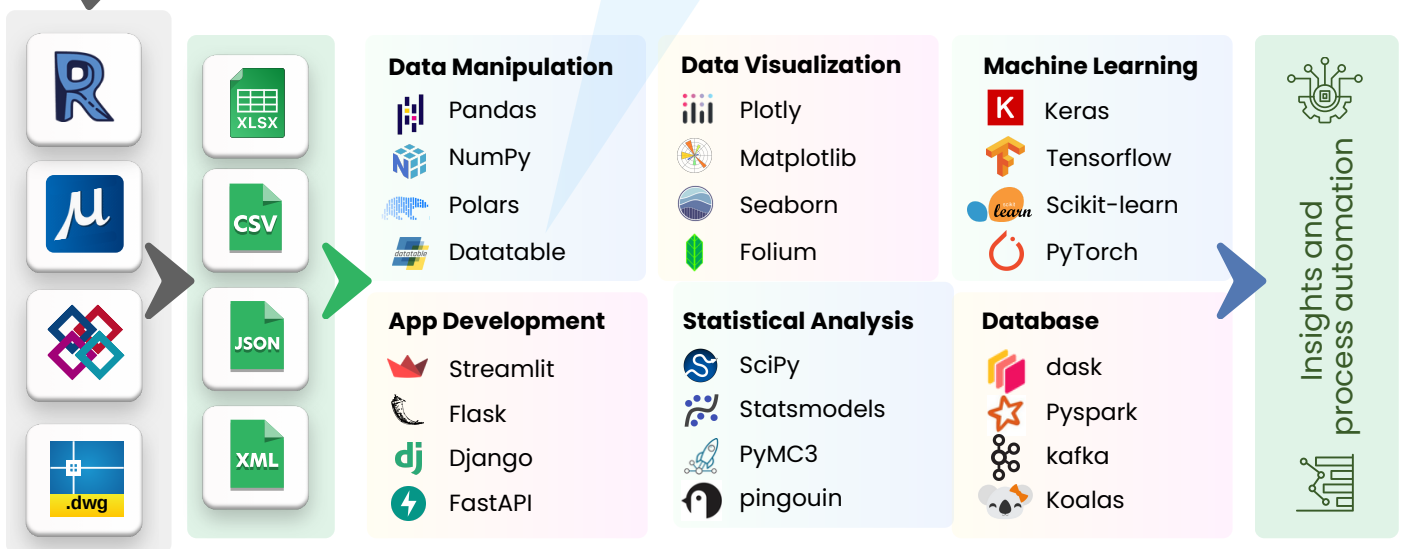
Continuous Support and Training

Ensuring your team is equipped to utilize analytical tools and methodologies effectively



Life Is Short, Use Python

to work with construction project data



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TEXT TO ACTION

LLM for CAD-BIM

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GROUPING AND PROCESSING WITH ONE LINE OF CODE

TEXT REQUESTS VIA PROMPTS IN LLM CHATS

```

Input
Filtering data in Revit and IFC projects.py
1 # Whether each element contains the values
2
3 df[df['Category'].isin(['Wall', 'Window'])]

```

Id	Category	Length	Volume
12577	Wall	3200	1.0
15889	Wall	5400	6.0
74456	Window	1700	0.5

Filter the data in the project to keep the wall category items in the project

```

Input
GroupBy Revit IFC.py
1 # Grouping a Revit or IFC project by parameters
2
3 df.groupby('Category')['Volume', 'Length'].sum()

```

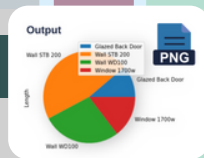
Category	Volume	Length
Door	0.3	1300
Wall	7.0	8600
Window	0.5	1700

Group the project by the "Type Name" parameter and show the volume of each group

```

Input
Creating a PDF document.py
1 from fpdf import FPDF
2
3 # Determining the volumetric characteristics of the group
4 s_cat = 'Window'
5 dfq = df[df['Category'].str.match(s_cat)]
6 dfq = dfq.groupby('Category')['Volume', 'Length'].sum()
7 cat_len = str(dfq.iloc[0]['Length'])
8 cat_vol = str(dfq.iloc[0]['Volume'])
9
10 # Creating a PDF document based on the parameters found
11 pdf = FPDF()
12 pdf.add_page()
13 pdf.set_font('Arial', 'B', 16)
14 pdf.cell(190, 8, 'Category: ' + s_cat, 2, 1, 'L')
15 pdf.set_font('Arial', '', 14)
16 pdf.cell(190, 8, 'Sum of volumes: ' + cat_vol, 2, 1, 'L')
17 pdf.cell(190, 8, 'Sum of lengths: ' + cat_len, 2, 1, 'L')
18
19 # Saving a document in PDF format
20 pdf.output('c:\report_DataDrivenConstruction.pdf', 'F')

```



Choose the first 20 types by volume and show the result as a Pie chart

PDF

Create a PDF report with a table and a graph



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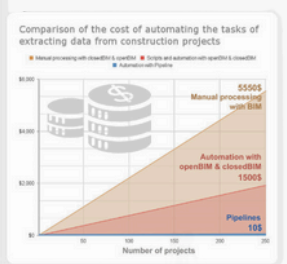
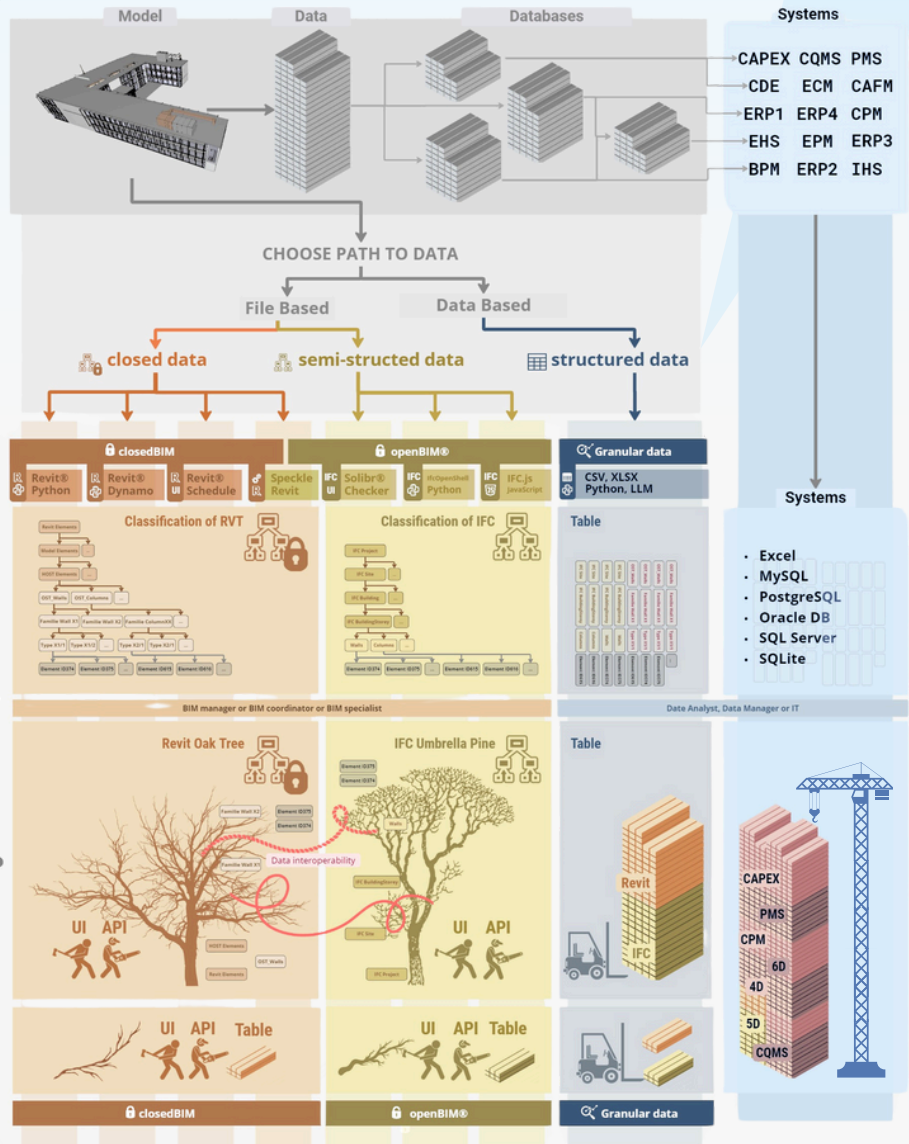
Moving from Files to Granular Data

CAD (BIM) project management is complex, the sheer number of files, different schemas and versions leads to costly and inefficient workflows.

Different project formats have different data schemas that need to be adapted to when processing each business case. Dozens of different schemas make unified data processing impossible.

Complex structured formats in semi-structured form make it difficult to access element properties.

With DDC Data Models, you unlock efficiency, reduce costs, and gain a reliable source of truth to achieve your project goals faster.



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Online and Offline

Workshops



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construction.io



The workshop consists of several modules, which can be chosen in any order and in any number, allowing you to tailor the learning process to your interests and needs. Each module is designed to be concise and as informative as possible, **lasting 40-60 minutes.**

Introduction to Data in Construction

- 1.1 Data Automation and Workflows in Construction
- 1.2 Data Management Systems in Construction
- 1.3 Different types of Data, Databases and Excel
- 1.4 Data-Driven Decision Making in Construction Projects

History and Development of CAD/BIM

- 2.1 The Evolution of CAD: From 2D to 3D Design
- 2.2 Autodesk's Acquisition of Revit and the Rise of BIM
- 2.3 Closed vs. Open BIM: The Debate and Its Consequences
- 2.4 The Role of IFC in BIM Standards and Open Data Formats

CAD/BIM and Data Parameterization

- 3.1 Automated Data Processing Workflow in Construction
- 3.2 Exporting and Processing Project CAD (BIM) Data
- 3.3 Quality Control in CAD (BIM) Project Data
- 3.4 The Future of CAD (BIM) Data Processing
- 3.5 Solving Problems of Closed Data Formats in BIM

Challenges of BIM, openBIM, and IFC

- 4.1 Common Challenges in BIM Implementation
- 4.2 Limitations of Closed BIM Systems
- 4.3 The Role of openBIM and the Limitations of the Concept
- 4.4 Overcoming Interoperability Issues with IFC
- 4.5 The Final Level of BIM Maturity

Open Data and Tools in Construction

- 5.1 Transitioning to Open Data Systems in Construction
- 5.2 Challenges and Benefits of Implementing Open BIM
- 5.3 Process Automation Using Open Tools
- 5.4 Integrating Open Source Tools into Construction Processes

Data Types in Construction

- 6.1 Managing Structured Data: Excel and Relational Databases
- 6.2 Processing Unstructured Data: Text, PDFs, and Documents
- 6.3 Working with Semi-Structured and Geometric Data
- 6.4 Understanding CAD (BIM) Data and the BOM-BIM Concept

Data Quality and Requirements

- 7.1 Ensuring Data Quality in Construction Projects
- 7.2 Creating Requirements and Task Parameterization
- 7.3 Automating Data Quality Assurance Processes
- 7.4 Data Validation Methods and Reporting Results

Data Management in Construction Projects

- 8.1 Data Integration Between ERP and BIM Systems
- 8.2 Data Modeling and Standardization Techniques
- 8.3 Integrating Diverse Data Systems and Formats
- 8.4 Converting Unstructured Data into Structured Formats

Automating the Design Process

- 9.1 Serial Construction and Design Parameterization
- 9.2 Libraries, families and metadata
- 9.3 Visual Programming Tools: Dynamo and Grasshopper
- 9.4 Understanding APIs and the Role of Python in Construction
- 9.5 Creating an Automated Workflow and Pipeline for Projects

Data Analytics and Data-Driven Decision Making

- 10.1 Structuring and Granularity of Multi-Format Data
- 10.2 Introduction to the Analytics Tool for Data Automation
- 10.3 Replacing Excel Data Processing via Data Analytics
- 10.4 Visual Representation and Analytics for Insights
- 10.5 Tracking KPIs and Project Performance with Dashboards
- 10.6 Analyzing and Interpreting Data for Strategic Decisions

Data Analytics and Visualization Tools

- 11.3 Automating Data Cleaning and Transformation
- 11.4 Visualizing Construction Data with Python and Pandas
- 11.5 Advanced Techniques and Integration with Databases
- 11.6 Automation of report generation based on Excel and PDF sources

Big Data and AI in Construction

- 12.1 Using Big Data in Construction Projects
- 12.2 Collecting Data from Diverse Sources
- 12.3 Forecasting with Machine Learning Methods
- 12.4 Improving Decision-Making with Big Data Analytics
- 12.5 Applying ChatGPT and LLM Models for Data Analysis

Digital Transformation in Construction

- 13.1 Challenges of Digitalization in the Construction Industry
- 13.2 Impact of Digital Tools on Project Management
- 13.3 Ensuring Data Quality During Digital Transformation
- 13.4 Key Stages of Transformation That Companies Will Have to Go Through

Cost Estimation and 4D/5D in Construction

- 14.1 Frameworks and Methods for Estimating Volumes, Costs, and Timelines
- 14.2 5D BIM: Cost Estimation and Budgeting
- 14.3 Creating Cost Estimates for Construction Projects
- 14.4 Implementing 5D BIM and Automating 4D/5D Processes
- 14.5 Future Trends in Project Calculation Methods

Carbon Footprint and Environmental Automation

- 15.1 Estimating the Carbon Footprint in Construction
- 15.2 Automating CO₂ Emissions Calculations
- 15.3 Applying 6D, 7D, 8D Dimensions to Project Data

Challenges in Data Management

- 16.1 Addressing Data Quality Issues in Construction Projects
- 16.2 Integration Challenges Between Different Data Systems
- 16.3 Overcoming Obstacles of Closed Data Formats

ERP Systems in Construction


- 17.1 Overview of ERP Systems in Calculations and Estimates
- 17.2 Modular Design of ERP Systems
- 17.3 Challenges and Transparency Issues in ERP Systems
- 17.4 Role of ERP Systems in Digital Transformation

Unlock Efficiency:
Embrace Digital Transformation

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Unlock the full potential of your construction projects with our specialized consulting services at DataDrivenConstruction.io. Our expertise in CAD (BIM) data integration and management transforms your workflow efficiency and decision-making process.

What We Offer



Customized Data Strategies

Tailored solutions for data collection, management, and analysis that fit your specific project requirements



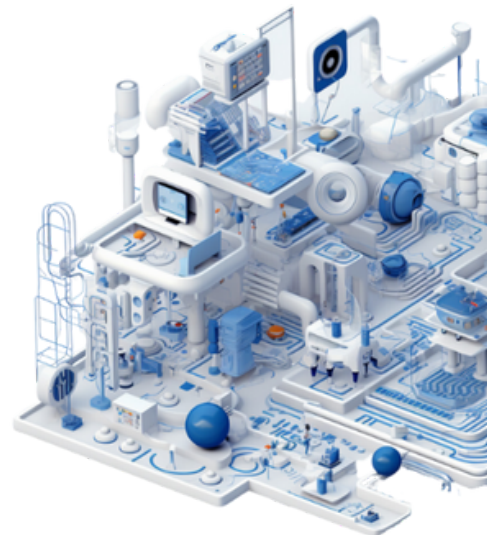
CAD Conversion and Integration

Streamline your project documentation with our advanced CAD conversion tools, making data easily accessible and usable



Training and Support

Empower your team with the knowledge to leverage BIM data, enhancing productivity and innovation



Your Benefits

Reduce Costs and Save Time

Our strategies optimize resource allocation and project timelines



Enhanced Decision Making

With better data at your fingertips, make more informed decisions that lead to successful project outcomes



Competitive Edge

Stay ahead in the industry with cutting-edge data practices that set your projects apart



Transform your approach with
DataDrivenConstruction and lead
your projects to success with data!



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become our ambassador or partner

Join the Open Data and Tools Movement!

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We offer everyone the opportunity to be part of the future where data is accessible, open, and easy to integrate. With our support, you can transform complex design and construction processes into automated, efficient, and accessible solutions

Why Become an Ambassador?



Influence the Industry

You will have the chance to directly impact industry standards and practices by promoting the use of open tools



Exclusive Access to Resources

Gain early access to our materials, updates, webinars, and tools that will keep you at the forefront of innovation



Build Your Personal Brand

As an ambassador, you position yourself as an expert in using simple and open technologies, boosting your reputation in the professional community



Professional Growth

You will learn and grow alongside leading experts in automation, data analytics, and open formats, expanding your skill set

Who Are We Looking For?

We are seeking enthusiasts, experts, and innovators who want to:



Promote the use of open data formats and tools



Organize training sessions, seminars, or webinars



Contribute to the development of open technologies through articles, blogs, social media, or videos



Collaborate with us to attract new companies and professionals to the use of simple and free tools

How to Become a Partner?

Submit an Application

Share your contact details and tell us about yourself, including why you're interested in this project



We'll discuss cooperation together

We will provide you with all the necessary materials and instructions to become an expert in using our solutions



Start Sharing Knowledge

Host training events, write articles, or share information on social media, helping others implement simple and open tools in their work



Benefits for Ambassadors and Partners

Exclusive materials and tools



Support from our team every step of the way



Recognition for your contribution to the community



Ready to Join?

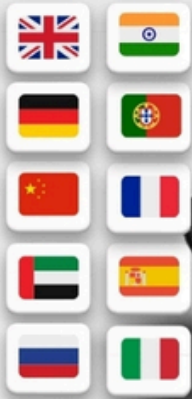
Contact us to learn more about becoming an ambassador or partner, and let's build the future together with open data and simple solutions!



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DataDrivenConstruction Guidebook

Navigating the Data Age in the Construction Industry



Don't miss your **chance** to enter a **new era**



Martin Loureiro-Barrientos
BIM Coordinator | Populous, London

★★★★★

Probably the most interesting book of the last two years that I know of. Required reading to break free from the 'matrix' perpetuated by software vendors, this book delves into how emerging tools like artificial intelligence offer fresh opportunities for data management without extensive technical expertise, poised to revolutionize even the most antiquated sectors like construction.

With flawless translation and mind-bending graphics, it's a must-read. Eagerly anticipating the sequel. Very good buy in my opinion...

I will read it again and waiting for the second part!

Paul Ransley
PLU Systems Engineer | Transport for London

★★★★★

I highly recommend Artem's book that addresses, as the title says, a data driven information management approach for AECO. I am currently using it to help initiate a number of discussions with various groups. I have found it a very accessible reference.

As well as a thorough overview of the history context of tools in AECO, data and introducing several key technologies the book contains a number of very useful diagrams, that outline the scope of data sources and end user artefacts, common database types encountered, applications working on that data and output artefacts in organisations or projects, with sample workflows.

It strikes me that these are the types of diagrams we need more of when developing and monitoring information strategies and contribute to BEP's - defining the overall enterprise data model onto which the boundary for a PIM and AIM can be overlaid.

Pierpaolo Vergati
Senior Construction Project Manager | Rlm

★★★★★

For anyone in the construction industry, from rookies to seasoned pros, this book is a game-changer! It's not your typical dusty read—it's packed with insights, strategies, and a touch of humor to keep you engaged. From ancient data recording methods to cutting-edge digital technologies, it covers the evolution of data usage in construction.

It's like taking a time machine through the evolution of construction data—minus the wonky flux capacitor.

And shoutout to Artem Boiko, our "Doc E. Brown", for crafting this data-packed journey!

Whether you're an architect, engineer, project manager or data analyst, this comprehensive guide will revolutionize the way you approach projects. Get ready to optimize processes, enhance decision-making, and manage projects like never before!

Salih Ofluoglu
Ankara Bilim University | Dean, Faculty of

★★★★★

I think that the book addresses a significant, contemporary topic relevant to the construction industry. As it was also emphasized in the book, information is a crucial asset for the construction sector, and having it in accessible formats greatly facilitates accurate decision-making and expedites project timelines.

The book offers a neutral and efficient approach to accessing and taking advantage of this source in decision-making. The methodology presented in the book leverages a contemporary approach that combines artificial intelligence-driven programming with accessible open-source tools.

By harnessing the power of AI and utilizing open-source software, the methodology aims to enhance automation, optimize processes, and promote accessibility and collaboration within the field. The language of the book is clear and easy to follow.

Congratulations on the quality work! I have enjoyed reading it. Wishing you continued success as well.

Natasha Prinsloo
BIM Coordinator | energislab UK

★★★★★

All I can say is, WOW! The way you incorporated history, ChatGPT, the graphics, and the overall ease of understanding your points is truly remarkable. The flow of the book is amazing.

There are so many brilliant aspects to this book; it's genuinely a game-changer. It's a great source of information, and I commend you for the effort and passion you've put into it. Congratulations on creating such a remarkable work. I could go on, but suffice it to say, I'm incredibly impressed!

