

## Research internship opportunity at DEMO Consultants

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DEMO Consultants is specialised in Real Estate Information Management. We actively perform software development, consulting and research activities at national and international level. At present DEMO conducts a number of research projects in the knowledge fields of BIM, GIS and software development for energy-efficient buildings and sustainable built cultural heritage.

We offer internship opportunity for BSc or MSc students who are looking for short-term research / graduation assignments. Relevant topics related to our on-going research projects are listed below. We also welcome other research ideas that fit within our core business.

DEMO's self-developed IFD Office is located at Delftechpark in Delft between other high-tech offices and in the vicinity of the Delft University of Technology and TNO campus.

Your internship application with a curriculum vitae and a cover letter can be sent by e-mail to [vacatures@demobv.nl](mailto:vacatures@demobv.nl). For further questions, please contact Mrs. Paula Etman (+31 15 750 2520).

### List of relevant topics related to current research projects.

#### STREAMER

[www.streamer-project.eu](http://www.streamer-project.eu)

This EU research project aims to optimise the early design process of energy-efficient hospitals. R&D effort is dedicated to BIM, semantic design configurator and design decision-support tool.

Possible research fields and topics for internship at DEMO (within 3-6 months):

- *[Research field: building informatics / BIM]* Further development of the prototype design configurator for new hospitals to be applied for retrofitting of existing hospitals.
- *[Research field: building informatics / BIM]* Extension of the prototype design configurator and design decision-support tool to analyse alternative designs of MEP/HVAC systems.
- *[Research field: building technology / design management]* Creation of an implementation roadmap of STREAMER design tools for hospital building projects in the Netherlands.

#### INSITER

[www.insiter-project.eu](http://www.insiter-project.eu)

This EU research project focuses on the use of BIM and Augmented Reality for building inspection in order to detect and prevent the quality and performance gaps between design and realisation of energy-efficient buildings.

Possible research fields and topics for internship at DEMO (within 3-6 months):

- *[Research field: building informatics / BIM]* Development of a preliminary software solution for interchange of 3D data models between diagnostic instruments (i.e. laser scanners and thermal cameras), BIM and software tool for building inspection (i.e. DEMO RE Suite).
- *[Research field: building technology / construction management]* Development of use cases for self-inspection by construction workers using INSITER instruments.

- *[Research field: building technology / construction management]* Creation of an implementation roadmap of INSITER innovations within the intended self-quality assurance policy ('private kwaliteitsborging') in the Netherlands.

## INCEPTION

[www.inception-project.eu](http://www.inception-project.eu)

This EU research project aims at 3D modelling of built cultural heritage for the purpose of monument asset management, European cultural identity and tourism.

Possible research fields and topics for internship at DEMO (within 3-6 months):

- *[Research field: building technology / construction management]* Structuring a practical method for monument asset management based on the European or international norms for cultural heritage condition assessment and decision-making.
- *[Research field: building informatics / BIM]* Enhancing a software tool for building condition assessment based on NEN2767 for application in monument asset management.
- *[Research field: building technology / construction management]* Defining INCEPTION demonstration cases and testing data for historic buildings / monuments in the Netherlands.

## ENGINENCY

This EU research project aims to integrate and commercialise state-of-the-art hardware and software for simulation, inspection and monitoring of building's energy-efficiency performance using a.o. drones, sensors, Building Management Systems (BMS), BIM and software platform for real estate information management.

Possible research fields and topics for internship at DEMO (within 3-6 months):

- *[Research field: building informatics / BIM]* Development of a preliminary solution for interaction between BMS, BIM, and the dedicated software and database.
- *[Research field: building informatics / building technology]* Setting-up use cases or scenarios for simulation, inspection and monitoring in different building and user typologies.
- *[Research field: building economics / construction management]* Developing feasible business models and EU commercialisation roadmaps for ENGINENCY innovations.

## TRECO-OFFICE

<http://www.tki-energo.nl/treco-office/>

This Dutch Top Sector Innovation project deals particularly with office buildings and aims to provide a reliable estimate of the building's energy-efficiency performance in order to establish a performance-based rental contract.

Possible research fields and topics for internship at DEMO (within 3-6 months):

- *[Research field: building informatics / BIM]* Development of a preliminary solution for interaction between BMS, BIM, and the dedicated software and database.
- *[Research field: building informatics / building technology]* Setting-up use cases or scenarios for building occupation optimisation depending on climate, building technology, and organisation-related factors.
- *[Research field: building economics / construction management]* Developing feasible performance-based rental contract for office buildings as well as a software instrument to support and monitor the fulfilment of such a contract.