DATA MANAGEMENT PLAN

# 1. Data description and collection or re-use of existing data

## How will new data be collected or produced and/or how will existing data be re-used?

New data will be generated during experimental research and numerical analyses. Experimental data will be collected by PCs directly connected to the research equipment. Test procedures, measurement conditions and settings will be collected by the person implementing the project.

The nature of the data collected varies. These are the results of measurements of accelerations, damages and displacements during experimental measurements of steel structures. Data on the structural characteristics of buildings are also collected: fundamental period, damage state, damaged floor, and number of stories. In the next stage, the data is analyzed and transformed for the needs of the Machine Learning model.

## What data (for example the types, formats, and volumes) will be collected or produced?

The data and documentation will be deposited in recommended formats. Data will be stored in accordance with prevailing standards and practice. Currently, quantitative data for the statistical software packages and documentation is preserved using XLS, SPF, DOC and PDF. The size of a single file will not exceed 20MB, however, the total disk space for all data is 2GB.

# 2. Documentation and data quality

## What metadata and documentation (for example methodology or data collection and way of organising data) will accompany data?

Quantitative data will be divided into subfolders corresponding to subsequent stages of analysis; file names will include the name of the analysis and the date it was prepared.

Selected data will be made available via an open research data repository MOST Wiedzy Open Research Data Catalog (common name Bridge of Data) and described in accordance with commonly used metadata standards. The author will be identified and authorized by an ORCID number.

## What data quality control measures will be used?

The structure will be tested several times and the results obtained will be compared and verified based on probabilistic methods. Data with insufficient reliability will be disclosed and will not be collected, and the test will be repeated, if necessary.

# 3. Storage and backup during the research process

## How will data and metadata be stored and backed up during the research process?

The data created and collected in "raw" form and as a result of analysis or post-processing will be stored on the work computer of the Gdańsk University of Technology and the shared One Drive workspace under the Office 365 A1 for faculty license. All data from the measurement units will also be stored on the control computers. The backup process will be performed monthly and the backup files will be stored on an external hard drive and One Drive shared workspace under the Office 365 A1 for faculty license.

## How will data security and protection of sensitive data be taken care of during the research?

Only project members will have access to the data; only selected project members will be able to save data. To share data with colleagues, a disk space (matrix) on the intranet managed by the Gdańsk University of Technology and protected by passwords will be used. All data will be backed up throughout the duration of the project.

# 4. Legal requirements, codes of conduct

## If personal data are processed, how will compliance with legislation on personal data and on data security be ensured?

Research data collected during the project will not constitute personal data.

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Ownership and management of all intellectual property related to the Project remains with the members of the research team and the Gdańsk University of Technology in accordance with Polish law and Resolution of the Senate of the Gdańsk University of Technology No. 117/2021/XXV of 19 May 2021. Data and results will be published in the open-access model under one of the CCBY or CC0 licenses.

## How will other legal issues, such as intelectual property rights and ownership, be managed? What legislation is applicable?

# 5. Data sharing and long-term preservation

## How and when will data be shared? Are there possible restrictions to data sharing or embargo reasons?

Some of the data will be published in the open research data repository Bridge of Data repository. The selected data will be made available at the time of publication of a scientific article on the proposed research.

Some of the data will be published in scientific journals, which may also require publication of raw data.

## How will data for preservation be selected, and where will data be preserved long-term (for example a data repository or archive)?

Good practice for digital preservation requires that an organization address succession planning for digital assets.

Principal investigator has a commitment to designate a successor in the unlikely event that such a need arises. The data set will be stored in the Bridge of Data repository. The repository is CoreTrustSeal certified, which means that it has established good preservation and dissemination practices. Data deposited in the repository will be automatically categorized for long term storage, without expiration date. Moreover, all data not selected for sharing will be stored by

PI for at least 10 years after the project is finished and access to them will be possible on direct request with the PI consent.

## What methods or software tools will be needed to access and use the data?

The data will be shared in open formats, so recipients will not need specialized software.

## How will the application of a unique and persistent identifier (such us a Digital Object Identifier (DOI)) to each data set be ensured?

Data sets made available in the Bridge of Data repository will be assigned a DOI number.

# 6. Data management responsibilities and resources

## Who (for example role, position, and institution) will be responsible for data management (i.e the data steward)?

Open Science Competence Center (pg.edu.pl/openscience) - established by Gdańsk University of Technology will be responsible for DMP and storing and disseminating data included in the Bridge of Data repository. The head of research (mgr. Neda Asgarkhani) will be responsible for assessing the procedures and overall data quality.

## What resources (for example financial and time) will be dedicated to data management and ensuring the data will be FAIR (Findable, Accessible, Interoperable, Re-usable)?

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