
Structural behaviour of partly precast concrete members subjected to static, repetitive and accidental loading

A Data Management Plan created using DMPonline.be

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Funder: Fonds voor Wetenschappelijk Onderzoek - Research Foundation Flanders (FWO)

Template: FWO DMP (Flemish Standard DMP)

Grant number / URL: 1SHFC24N

ID: 203986

Start date: 01-11-2023

End date: 31-10-2027

Project abstract:

Research into the structural behaviour of concrete structures concentrates mainly on structures cast in-situ (according to Scopus 87%, with only 13% dedicated to precast). In regulations phrases are sometimes included such as the specific request for emulative detailing for the seismic design of precast concrete structures (ACI 550.1R-09). On the other hand, it has been shown that the stability of concrete but also of steel-concrete structures, subjected to extreme loads (involving fire, fatigue and robustness items), is mainly determined by alternative load paths developed in the slabs. Precisely these slabs are often executed as partly precast structures with critical joint details on which this research will focus. Detailing rules at the level of the interface will ensure composite action, which is essential for the structural behaviour, but also integrity is involved where elements are coupled. The proposed research will unravel the functioning of current detailing rules (as common denominator) under static, dynamic and impact loading with suggestions for improvement where possible.

Last modified: 16-01-2024

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DPIA

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Have you performed a DPIA for the personal data processing activities for this project?

- No

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GDPR

GDPR

Have you registered personal data processing activities for this project?

- No

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Application DMP

Questionnaire

Describe the datatypes (surveys, sequences, manuscripts, objects ...) the research will collect and/or generate and /or (re)use. (use up to 700 characters)

Collect:

- Literature review and data from tests conducted at RWTH Aachen University (excel, csv, word, pdf, jpg)

Generate:

- Data of experiments: images (e.g. used for DIC), load cells, LVDTs, strain gauges, time-laps (excel, jpg, mp4)
- Results of experiments: analysis of results, processing of results, reports (word, pdf)
- FEA (Finite Element Analysis) simulations: input and output (excel, csv, Python, jpg, pdf)
- Scientific publications: PhD thesis, journal paper(s), conference papers (word, pdf)
- Presentations: summer school (DIC), PhD seminars (ppt, word, pdf)

(Re)use:

- Data from previous experiments conducted at De Nayer Campus (static behaviour of joints by floor plates) (excel, word, pdf, jpg, mp4)

The data is not personal.

Specify in which way the following provisions are in place in order to preserve the data during and at least 5 years after the end of the research? Motivate your answer. (use up to 700 characters)

- Designation of responsible person (If already designated, please fill in his/her name.)
 - during the research: Jules Smits
 - after the research: Tom Molkens
- Storage capacity/repository: Storage capacity is provided by KU Leuven and the research group of De Nayer Campus up to 10 years after the end of the research. The results of the research will be accessible in directly readable file formats.
 - during the research: OneDrive for Business (2TB)
 - after the research

What's the reason why you wish to deviate from the principle of preservation of data and of the minimum preservation term of 5 years? (max. 700 characters)

NA

Are there issues concerning research data indicated in the ethics questionnaire of this application form? Which specific security measures do those data require? (use up to 700 characters)

No

Which other issues related to the data management are relevant to mention? (use up to 700 characters)

NA

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FWO DMP (Flemish Standard DMP)

1. Research Data Summary

List and describe all datasets or research materials that you plan to generate/collect or reuse during your research project. For each dataset or data type (observational, experimental etc.), provide a short name & description (sufficient for yourself to know what data it is about), indicate whether the data are newly generated/collected or reused, digital or physical, also indicate the type of the data (the kind of content), its technical format (file extension), and an estimate of the upper limit of the volume of the data.

				Only for digital data	Only for digital data	Only for digital data	Only for physical data
Dataset Name	Description	New or reused	Digital or Physical	Digital Data Type	Digital Data format	Digital data volume (MB/GB/TB)	Physical volume
		<i>Please choose from the following options:</i> <ul style="list-style-type: none"> • Generate new data • Reuse existing data 	<i>Please choose from the following options:</i> <ul style="list-style-type: none"> • Digital • Physical 	<i>Please choose from the following options:</i> <ul style="list-style-type: none"> • Observational • Experimental • Compiled/aggregated data • Simulation data • Software • Other • NA 	<i>Please choose from the following options:</i> <ul style="list-style-type: none"> • .por, .xml, .tab, .csv, .pdf, .txt, .rtf, .dwg, .gml, ... • NA 	<i>Please choose from the following options:</i> <ul style="list-style-type: none"> • <100MB • <1GB • <100GB • <1TB • <5TB • <10TB • <50TB • >50TB • NA 	
Literature review	Review of existing literature (collect)	Reuse (collect) existing data	Digital	Other	.pdf	<100GB	
Sensor readings	Load cells, LVDTs, strain gauges...	Generate new data	Digital	Observational	.csv / .xml	<100GB	
Images	DIC, time-laps...	Generate new data	Digital	Observational	.jpg / .mp4	<1TB	
Analysis	of experimental results	Generate new data	Digital	Experimental	.csv / .xml / .pdf	<100GB	
Simulations	FEA	Generate new data	Digital	Simulation data	.csv / .xml / .pdf / .py	<1TB	
Publications	PhD thesis, journal paper(s), conference papers	Generate new data	Digital	Other	.pdf	<100GB	
Presentations	Summer school (DIC), PhD seminars	Generate new data	Digital	Other	.ppt / .pdf	<100GB	
Existing data	Experiments conducted at De Nayer Campus of KU Leuven (reuse) and RWTH Aachen University (collect)	Reuse (and collect) existing data	Digital	Observational	.csv / .xml / .jpg / .mp4	<100 GB	

If you reuse existing data, please specify the source, preferably by using a persistent identifier (e.g. DOI, Handle, URL etc.) per dataset or data type:

Existing data of experiments conducted in the past:

- De Nayer Campus of KU Leuven: Prof. Tom Molkens and Prof. Ann Van Gysel

- RWTH Aachen University: Prof. Martin Classen

Are there any ethical issues concerning the creation and/or use of the data (e.g. experiments on humans or animals, dual use)? Describe these issues in the comment section. Please refer to specific datasets or data types when appropriate.

- No

Will you process personal data? If so, briefly describe the kind of personal data you will use in the comment section. Please refer to specific datasets or data types when appropriate.

- No

Does your work have potential for commercial valorization (e.g. tech transfer, for example spin-offs, commercial exploitation, ...)? If so, please comment per dataset or data type where appropriate.

- No

Do existing 3rd party agreements restrict exploitation or dissemination of the data you (re)use (e.g. Material/Data transfer agreements/ research collaboration agreements)? If so, please explain in the comment section to what data they relate and what restrictions are in place.

- No

Are there any other legal issues, such as intellectual property rights and ownership, to be managed related to the data you (re)use? If so, please explain in the comment section to what data they relate and which restrictions will be asserted.

- No

2. Documentation and Metadata

Clearly describe what approach will be followed to capture the accompanying information necessary to keep data understandable and usable, for yourself and others, now and in the future (e.g., in terms of documentation levels and types required, procedures used, Electronic Lab Notebooks, README.txt files, Codebook.tsv etc. where this information is recorded).

- Sensor readings: sensor settings, symbols -> README.txt
- Simulations: settings, symbols -> README.txt

Will a metadata standard be used to make it easier to find and reuse the data? If so, please specify (where appropriate per dataset or data type) which metadata standard will be used. If not, please specify (where appropriate per dataset or data type) which metadata will be created to make the data easier to find and reuse.

- Yes

Metadata will be saved on README.txt files. The template is provided by KU Leuven.

3. Data storage & back-up during the research project

Where will the data be stored?

OneDrive for Business cloud storage is available through KU Leuven with 2 TB storage size and a full backup.

How will the data be backed up?

OneDrive for Business cloud storage is available through KU Leuven with 2 TB storage size and a full backup.

Is there currently sufficient storage & backup capacity during the project? If yes, specify concisely.

If no or insufficient storage or backup capacities are available, then explain how this will be taken care of.

- Yes

OneDrive for Business cloud storage is available through KU Leuven with 2 TB storage size and a full backup. There is a possibility to enlarge the storage size to 5 TB.

How will you ensure that the data are securely stored and not accessed or modified by unauthorized persons?

OneDrive can share documents with or without editing rights.

What are the expected costs for data storage and backup during the research project? How will these costs be covered?

The costs are covered by KU Leuven.

4. Data preservation after the end of the research project

Which data will be retained for at least five years (or longer, in agreement with other retention policies that are applicable) after the end of the project? In case some data cannot be preserved, clearly state the reasons for this (e.g. legal or contractual restrictions, storage/budget issues, institutional policies...).

All data will be preserved for 10 years according to KU Leuven RDM policy.

Retained data:

- are at the basis of publications (or PhDs)
- can only be generated or collected once (e.g. live observations, unique access to data, ...)
- are generated or collected as a result of substantial financial or personal efforts (e.g. fieldwork in difficult locations, longitudinal data, ...)
- are likely to be reused within the research unit or in wider contexts

Where will these data be archived (stored and curated for the long-term)?

RDR (Research Data Repository) provided by KU Leuven.

What are the expected costs for data preservation during the expected retention period? How will these costs be covered?

RDR is an open-source software.

5. Data sharing and reuse

Will the data (or part of the data) be made available for reuse after/during the project? In the comment section please explain per dataset or data type which data will be made available.

- Yes, in an Open Access repository

If access is restricted, please specify who will be able to access the data and under what conditions.

/

Are there any factors that restrict or prevent the sharing of (some of) the data (e.g. as defined in an agreement with a 3rd party, legal restrictions)? Please explain in the comment section per dataset or data type where appropriate.

- No

Where will the data be made available? If already known, please provide a repository per dataset or data type.

RDR

When will the data be made available?

Upon publication of research results.

Which data usage licenses are you going to provide? If none, please explain why.

Attribution-ShareAlike 4.0 International (CC BY-SA 4.0)

Do you intend to add a PID/DOI/accession number to your dataset(s)? If already available, you have the option to provide it in the comment section.

- Yes

RDR (repository) automatically provides a DOI.

What are the expected costs for data sharing? How will these costs be covered?

RDR is an open-source software that gives a one-stop platform to upload, describe, and share their research data, conveniently and with support from university staff.

6. Responsibilities

Who will manage data documentation and metadata during the research project?

Jules Smits

Who will manage data storage and backup during the research project?

Jules Smits

Who will manage data preservation and sharing?

Tom Molken

Who will update and implement this DMP?

Jules Smits