



Kenniscentrum
**Bodemdaling
en Funderingen**

coalitie 
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Position paper/ Report on the development of the Coalition Solid Cities



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1 Introduction

Land subsidence in cities is a major social challenge that affects people's lives. The costs and the inconvenience that is caused by land subsidence increase continuously. The Netherlands Environmental Assessment Agency (PBL) estimated that the extra costs for repair and maintenance of urban infrastructure – both above and under the ground- will rise to € 5.2 billion up to 2050, if policy remains the same. The costs that private house owners will face as a result of damage to foundations are estimated at a total of a staggering € 16 billion. All in all damage caused by land subsidence in urban areas causes huge costs and threatens the economic vitality of the city and its heritage.¹

There is a lack of attention and management for this serious threat of land subsidence in urban areas. A boost and acceleration is needed to avoid billions of damage! For that reason the *Coalition of Solid Cities* was founded. It is com-

mitted to strengthen perspectives for dealing with the damage of land subsidence.

The Coalition Solid Cities:

- strengthens complex and innovative projects in the field of land subsidence and foundations in urban areas in the Netherlands;
- offers organisations involved in these projects a network, (experiential) knowledge and direct access to these networks in the Netherlands;
- is a collaboration of ambitious governments, knowledge institutions, companies and other stakeholders.
- is set up as an organisation of the National Knowledge Center for Land Subsidence and Foundations. It is financed by LIFE IP, the Knowledge Center for Land Subsidence and Foundations, the Netherlands Enterprise Agency and the municipality of Gouda.



- invites organisations to participate as a partner.
- defines its own agenda.

¹ Tackling nuisance caused by land subsidence in a valuable historic city entails extra complexity. The Coalition of Solid Cities therefore pays extra attention to projects in national heritage site.

2 Working in a coalition works!

In 2014 a local initiative - 'Gouda Coalition Solid City on Soft Soil' - was established to deal with the local problems due to land subsidence in the historic city of Gouda.² This Coalition has focused entirely on developing a solution for the nuisance caused by subsidence in the historic city center of Gouda. This Coalition played an important role and was very successful in developing a long-term solution as described in the Framework Plan for Soil Subsidence for the Inner City of Gouda. For the members of the Coalition, the cooperation in recent years has provided a solid base for development and exchange of knowledge and contacts. This Coalition is a blue print for the national Coalition Solid Cities.

FROM A LOCAL TOWARDS A NATIONAL COALITION

The Coalition of Solid Cities is a national broad network of governments, companies,

knowledge institutions and interest groups and focuses on perspective for dealing with land subsidence and foundations in urban areas. There is a strong need for this Coalition as the urban land subsidence issue needs a boost and acceleration to avoid nuisance and billions of damage! The first initiatives for the national Coalition Solid Cities were presented on 19 November 2020 during the National Subsidence Conference. The Coalition Solid Cities is committed to strengthen perspectives for dealing with the damage of land subsidence and has structured this in three major pillars:

1. *Construction houses* with the aim of 100% subsidence-resistant new construction houses from now on;
2. *Foundations* with the aim of preventing damage due to drought, subsidence and weight and repair of foundations from now on;
3. *Public space and infrastructure* with the aim of subsidence-resistant public space and infrastructure from 2050.

GOAL

The Coalition Solid Cities is committed to strengthen perspectives for dealing with the damage of land subsidence. It strengthens complex and innovative projects in the field of subsidence in urban areas. This focus on projects stems from the desire to contribute to the development of concrete perspectives (focus on 'doing'). The Coalition of Solid Cities offers organisations involved in these projects reflection, (experience) knowledge and access to relevant networks.

The coalition also provides guidelines for the sustainable embedding of land subsidence measures (such as life cycle cost approach) in the construction, management and maintenance of public space.



² Municipality of Gouda, the Water Authority of Rijnland, Delft University of Technology, The Dutch Department of Waterways and Public Works, Deltares and the Knowledge Center for Foundation.

PARTNERS

The Coalition Solid Cities is a national collaboration of ambitious governments, knowledge institutions, companies and other interest groups. Land subsidence influences a lot of stakeholders. The members of the coalition are taking part because, based on their own objectives, they have an interest in strengthening their knowledge and network in the field of urban subsidence. Participation in the coalition therefore happens 'in kind'.

The Coalition Solid Cities consists of a broad reflection of society representing public and private interests. A solid representation of the

golden triangle of governments, companies and knowledge institutions is the ambition. The following partners are welcomed: Association of Insurers, Dutch Association of banks, Association of house owners (Vereniging Eigen Huis), Housing associations, Provinces, Netherlands Organisation for Applied Scientific Research, Knowledge Center for Land Subsidence and Foundations, the Netherlands Enterprise Agency, municipality of Gouda, KCAF, Deltares, Delft University of Technology, The Dutch Department of Waterways and Public Works, Constructors et cetera.

AN EXTRA IMPULS FOR DEALING WITH LAND SUBSIDENCE IN CITIES

With a focus on strengthening projects in urban areas, the Coalition Solid Cities complements the existing national network in the field of subsidence. It gives substance to the national ambition to create an acceleration of policy and measures to deal land subsidence in urban areas. The Coalition Solid Cities thus becomes a 'working organisation' that operates for the Knowledge Center for Land Subsidence and Foundations.



3 Focus on projects

Projects that will be on the agenda of the Coalition are the top and leading projects in the field of foundations and land subsidence. The partners benefit from supporting and/or following these top projects.

To give the Solid Cities Coalition a flying start, the following projects are on the agenda:

1. Dealing with urban drought. Project focusing on the impact of drought in urban areas.
Project owner: Deltares leading a large consortium
2. Predicting Damage to buildings. Project focusses on developing a software model that can predict damage to buildings caused by land subsidence.
Project Owner: TNO
3. Subsidence in the Inner City'. a.o. research into: the consequences of increasing height differences in the city, support for owner-occupiers and the further reduction of flooding.
Project owner: Municipality of Gouda / Water Authority of Rijnland.

4. Toolbox land subsidence in historic cities. In this project, solutions and approach for the Gouda city center are translated into a broader applicability for built-up areas in the Netherlands.

Project owner: Municipality of Gouda / Water Authority of Rijnland.

The Coalition Solid Cities has the ambition to supplement the list of projects in which it is involved as quickly as possible with a number of other interesting projects such as project developed by Deltares and TNO.

EVENTS

The partners of the Coalition meet one another 3 times a year during an event that focusses on one of the three defined pillars (Foundations, New Construction and Public Space and Infrastructure). During these events, projects relevant for this pillar are asked to submit issues of strategic importance for discussion. Combining meetings with excursions, work or location visits is a success as are innovation challenges. Participation in the Coalition is estimated to require approximately 40 hours per year of each partner. The development of the Coalition is supported by a diverse group of parties. Over the next period broadening the Coalition to a national profile is taking place.



4 Learning points

Are there lessons that can be learned from developing this Coalition of Solid Cities? Although each process and coalition will have it's own characteristics and specific challenges, there are a learning points to share.

It all starts with a clear goal for the coalition. Define what you want to achieve. Organisations will recognize a clear goal described in a presentation or position paper. It allows possible partners to determine their interest. The initiators of the coalition should therefore run a solid stake holder analysis. This is

required as one of the first steps because the strength of the overall coalition is defined by it's partners. For each of the partners the benefit of joining must be obvious. The coalition should be agile and open. If circumstances or goals change during time, organisations may step in and other may step out. This defines good partnership and allows for long lasting networks. Effective communication within the coalition but also outside of the coalition is a must. The importance cannot be over-estimated. And last but not least dedicated and inspiring project management is a must.

Contact

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