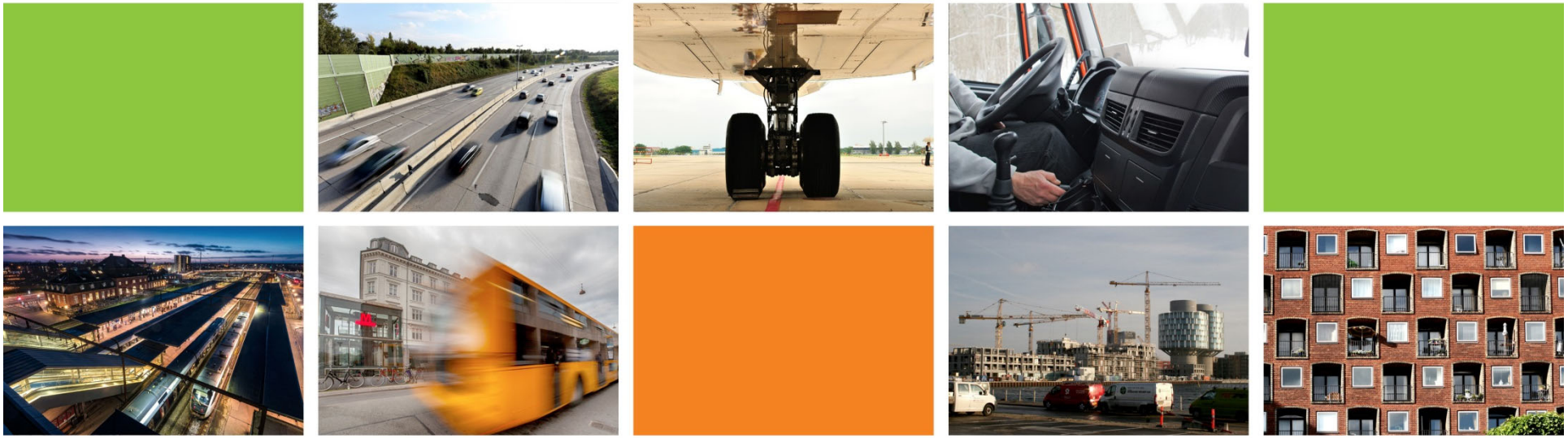
Trafik-, Bygge- og Boligstyrelsen
Danish Transport, Construction and Housing Authority

Legionella and risk assessment



Danish Transport, Construction and Housing Authority
Center for Construction
Nordiskt Vattenskadeseminarium 2019
2019-08-29

Transport-, Bygnings- og Boligministeriet

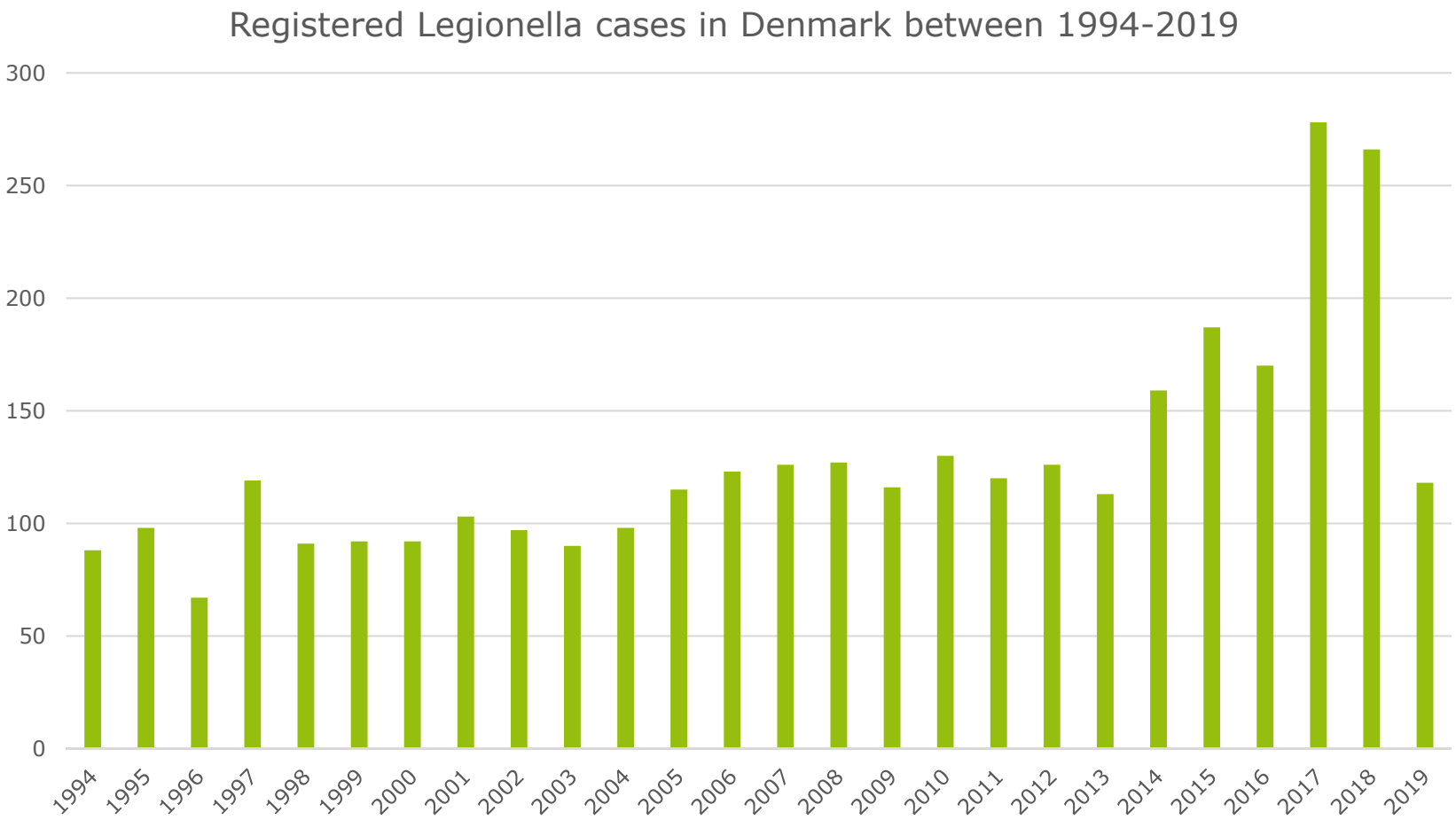
Agenda

- Background
- Government action
- Risk assessment

What is legionella?

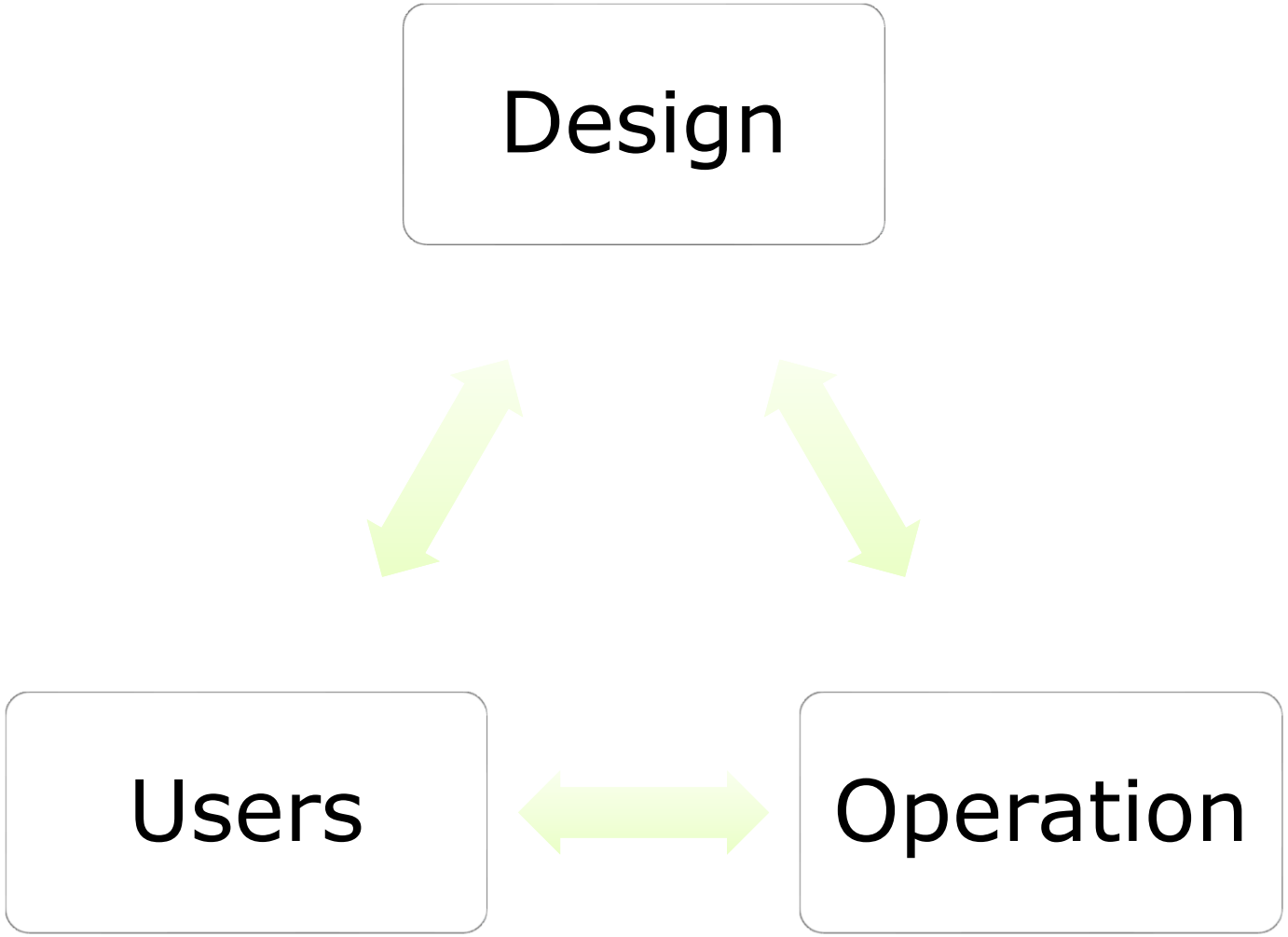
- Bacteria survives in water between 20 °C and 50 °C
- Lives in biofilms
- Infects primarily via aerosols

Background



SSI - July 2019

How can we prevent legionella?



Current projects with relevancy for Legionella

- Interministerial taskforce
- Municipial workflows
- Use of water testing
- Dimensioning of water systems
- Information efforts
- Update of the guidance in the building regulations

Building regulations in Denmark

§405 subsection (1) para 1)

- Water installations must be planned and constructed to ensure that: they can function without risk to the health of people as a result of bacteria growth, including legionella, in the water,

§405 subsection (2)

- Subsection 1, para (1) can be complied with by adhering to Rørcenteranvisning 017 Legionella Installationsprincipper og bekæmpelsesmetoder.

§419 subsection (1)

- Operation and maintenance of water installations must always be carried out in accordance with the provisions of §§ 404-418

What is Rørcenteranvisning 017?

The text contains:

- Information on how to design to prevent legionella
- An overview of different types of drinking water systems and their relationship to legionella
- Focal points for Operation and Maintenance
- How to perform a Risk Assessment
- How to combat legionella

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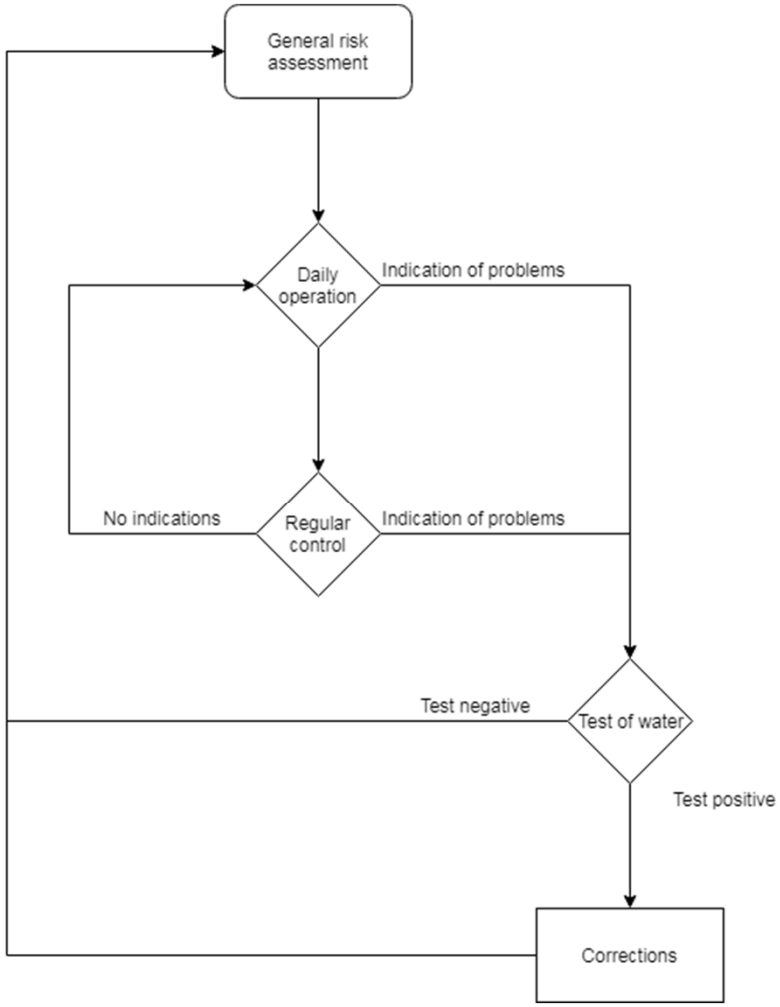
General structure of the risk assessment



General risk assessment

	System design			Operation	
Identification	Identification of all components in the system	Diagram of the system	Identification of areas with highest heat transfer	Temperature of the cold water at the warmest time of the year	Identification of any areas or installations in the building that is not in regular use
Assessment	Assessment of areas where pollution might enter the water stream including during maintenance.	Assessment of materials that might form the basis for growth of bacteria	Assessment of risk of generation of aerosols	Assessment of vulnerability of the users	Monitoring program

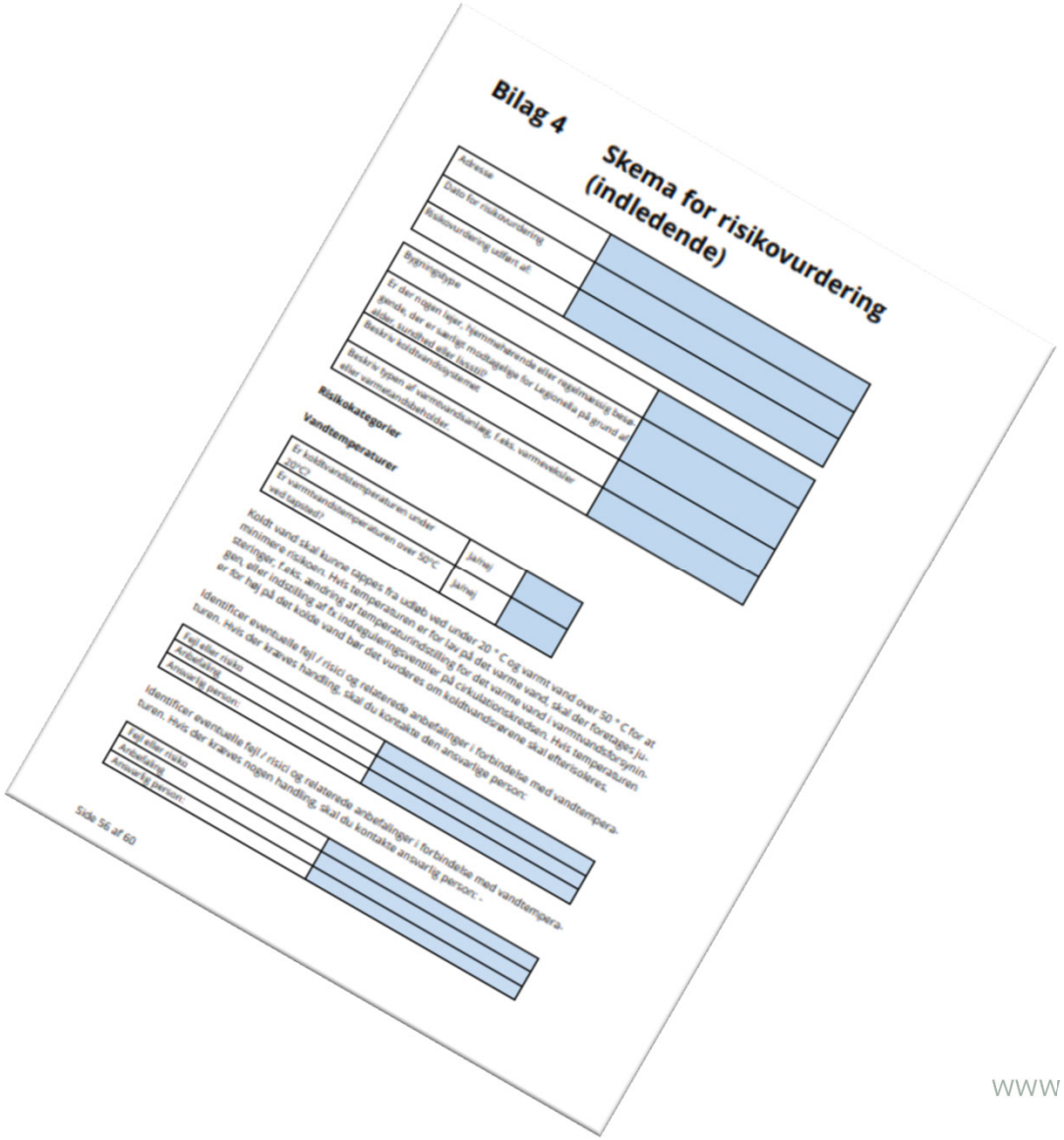
Daily operations

- Smell
- Biofilm
- Low quality soldering
- Discolouration of water
- Reduced temperature
- Skin problems

Regular control

	Annually	Biannually	Quarterly	Monthly	Weekly
Warm water	Water tests Visual inspection of waterheaters Temperature at representative taps			Temperatures forward and return Cirkulation pump Temperature at the critical tap	Clean larger water tanks
Cold water	Check the temperature of the water at a number of representative taps after 2 min. of operation	Check water temperatures at entry of water line to building		Check water temperature at one of the first taps in the building after 2 min. of operation	
Installations	Water treatment units should be maintained according to the manufacturer	Check thermostatic regulating valves	Shower heads and shower hoses are cleaned and if necessary changed		Flush infrequently used taps

Suggested checklist



Bilag 4

Skema for risikovurdering (indledende)

Adresse

Dato for risikovurdering

Risikovurdering udført af:

Bygningstype

Er der nogen leger, hjemmehørende eller regelmæssig besø-gende, der er særligt modtagelige for Legionella på grund af alder, sundhed eller lignende

Beskriv typen af varmtvandsanlæg, f.eks. varmevekslere eller varmelagerbeholder.

Beskriv koldtvandssystemet

Risikokategorier

Vandtemperaturer

Er koldtvandstemperaturen under 20°C

Er varmtvandstemperaturen under ved tapsted?

Ja/nej

Ja/nej

Koldt vand skal kunne tappes fra udtag ved under 20 ° C og varmt vand over 50 ° C for at minimere risikoen. Hvis temperaturen er for lav på det varme vand, skal der foretages justeringer, f.eks. ændring af temperaturindstilling for det varme vand i varmtvandsbeholderen, Hvis temperaturen, efter indstilling af fx. indreguleringsventiler på cirkulationskredsen, Hvis temperaturen er for høj på det kolde vand bør det vurderes om koldtvandsrørene skal efterisoleret.

Identificer eventuelle fejl / risici og relaterede anbefalinger i forbindelse med vandtemperaturen. Hvis der kræves handling, skal du kontakte den ansvarlige person:

Fejl eller risiko

Anbefaling

Ansvarlig person:

Identificer eventuelle fejl / risici og relaterede anbefalinger i forbindelse med vandtemperaturen. Hvis der kræves nogen handling, skal du kontakte ansvarlig person: -

Fejl eller risiko

Anbefaling

Ansvarlig person:

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Questions and links

Bygningsreglementet

www.bygningsreglementet.dk

Rørcenteranvisning 017

www.teknologisk.dk/ydelser/roercenter-anvisninger-og-rapporter-fra-roercentret/486