# How do we know whether our indoor air is of good quality?

## What is the thermal, acoustic and visual comfort in living spaces?

### OBJECTIVE

The objective of the Indoor Air Quality Observatory (OQAI) is to provide knowledge on pollution and discomfort situations and identify their causes to provide recommendations to stakeholders: policy makers, health authorities, non-governmental associations, professionals, citizens, to improve indoor air quality and public health.

Thus, the OQAI has conducted many studies on pollution and well-being in various living spaces.

### GOVERNANCE

The OQAI was created by the French government in 2001. It is part of an agreement between the ministries of housing, environment and health, the French Environment and Energy Management Agency (ADEME) and the Scientific and Technical Center for Building (CSTB), operator of the action program.

The OQAI is entirely publicly funded by government departments, ADEME and the French Agency for Food, Environmental and Occupational Health and Safety (ANSES).

Three bodies oversee the ethics of the actions, scientific quality and ties with building and health stakeholders: a steering committee, a scientific council and an advisory board.

### THE NETWORK

A multidisciplinary scientific and technical network is led by the CSTB to develop and implement research programs: physicians, epidemiologists, toxicologists, chemists, microbiologists, building experts, economists, and social psychologists.

The OQAI also has a strong international presence through many partnerships and by hosting guest researchers.

# Gaining insight to act effectively

The Indoor Air Quality Observatory is working on acquiring more knowledge about air and comfort in indoor environments to improve our quality of life.

### THE OQAI IS ACTING TO:

- Understand the building stock and its uses.
- Identify sources of pollution and hazardous situations.
- Characterize comfort in living spaces.
- Prioritize pollutants.
- Prevent pollution.
- Offer solutions.
- Manage and valuate nationwide collected data.


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Observatoire de la qualité de l'air intérieur

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# Indoor air quality for buildings

**Apartments, homes, schools, daycare centers, offices, recreation venues: 80% of the time, we're indoors.**


Design LUCIOLE • February 2017 • 1,000 copies •



Printed on certified paper FSC.



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# Our **mission:** improve indoor **air quality**

What is the air quality and comfort in living spaces? What determines the quality of indoor environments? How can we improve living conditions? **The Indoor Air Quality Observatory (OQAI)** answers these questions through four missions.

## 1 **DESCRIBE** THE QUALITY OF INDOOR ENVIRONMENTS

Taking into account the diverse situations: new and existing buildings, housing units, childcare institutions, workplaces, recreation venues, public buildings and health and social service facilities.

## 2 **IDENTIFY** HAZARDOUS SITUATIONS

By measuring population exposure to air pollution in living spaces to provide knowledge for health risk assessment and management.

## 3 **IDENTIFY** THE KEY FACTORS THAT CONTRIBUTE TO POLLUTION

Depending on the building location, the season, the occupants and their activities (DIY, cooking, smoking, etc.), construction materials, furniture, ventilation, heating system, etc.

## 4 **IMPROVE** THE QUALITY OF LIVING SPACES AND PROMOTE PREVENTION

By offering decision-support tools (air quality indices, air stuffiness measurement devices), and raising awareness in professionals and providing recommendations and guidelines to users.

# Our **actions** in various living spaces

## TARGET LIVING SPACES

- **Housing units**
- **Daycare centers and educational institutions**
- **Offices**
- **Recreational facilities**
- **Public buildings and health and social service facilities**
- **Energy-efficient buildings**

The Observatory performs national surveys and specific studies to develop knowledge on both population exposure to indoor air pollution and comfort of living spaces. It provides key inputs for taking preventive measures and improving the quality of indoor environments.

## NATIONAL SURVEYS

- Description of the building stock: materials, furnishings, ventilation, heating, etc.
- Levels of chemical, physical and microbiological pollution.
- Knowledge on occupants and their activities: time spent and activities indoors, socioeconomic status, behavior, etc.
- Identification of factors that affect air quality and comfort: outdoor environment, building, equipment, furniture, household products, occupant's behavior, etc.

## SPECIFIC STUDIES

- Emissions from cleaning products and school supplies in a school.
- Ventilation practices in daycare centers and schools.
- Characterization of microbial diversity in daycare centers and schools.

# Our **solutions** for progress

The Observatory is working on tools and methods to improve indoor air quality and comfort. It also alerts professionals and informs the public to foster changes in practices for a better quality of life.

## PRIORITIZATION OF POLLUTION ISSUES

- Ranking of pollutants based on health criteria and potential population exposure.
- Knowledge on barely studied pollutants, such as semi-volatile organic compounds related to the use of pesticides, flame retardants, plasticizers, synthetic musks, etc.

## DEVELOPMENT OF MANAGEMENT TOOLS

- Inventory of existing indoor air quality indices in France and abroad.
- Development of indices and predictive models for indoor pollution.
- Psycho-sociological study of the expectations and concerns about the use of indoor air quality indicators.
- Development of a device to assess indoor air stuffiness and help manage the opening of windows.

## SCIENTIFIC WATCH, INFORMATION AND EDUCATION

- Inventory of French and international data on indoor air pollution.
- Bulletins, information leaflets, guideline manuals.
- Public workshops, training sessions.
- Publication of research articles in national and international scientific journals.