

Environmental Protection & Sustainability



**Air Quality Monitoring
through Community Engagement**

www.SustainableCalne.org.uk – Air Quality - 3rd November 2020



Particulate Matter (PM_{2.5} & 10) Monitoring & Air Quality Awareness Project in Calne Wiltshire

*part of the citizen science
worldwide*

sensor.community



Calne Our Place



Sensor.Community is a contributor driven global sensor network that creates Open Environmental Data.

Our Objectives (not definitive – and a start not an end)

- Raise awareness of Air Quality issues in the community
- Target private individuals (esp. parents), schools & local authorities
- Encourage community management of Air Quality issues
- Build credibility for **sensor.community** solutions
- Credible community led AQ data collection beyond legal norms.

Measuring PM_{2.5} & PM₁₀ ‘fine dust’ air pollutants.

using a low cost microprocessor controlled PM sensor.

2.5 micrometer and 10 micrometer particulate matter.

Typical sources...



How **Sensor.Community** in Calne?

‘Calne Our Place’

a town-focussed
improvement group

In around 2017 **luftdaten.info**

became known through a Town Twinning with **Eningen** near Stuttgart. Despite the A4 running through the centre of Calne - insufficient interest at the time led to no action.



How **Sensor.Community** in Calne?

In early 2019
luftdaten.info appeared
again at a 'Calne Our
Place' meeting.



*Could have been nearly a case of insufficient
interest leading to no action, again! But...*

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How **Sensor.Community** in Calne?

So we embarked on the Calne Air Quality project with **luftdaten.info**



*Got off to a quick start with help from a **Town Twinning** friend from **Eningen** who was already involved.*



Why **Sensor.Community** in Calne?

Air Quality was and is an issue in Calne

We are on the A4 with ½ a bypass!

Initial aims:

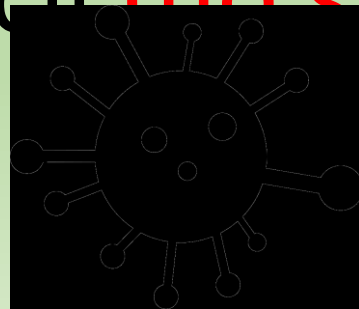
- Build 2 or 3 test units to gain experience & confidence
- Get 'Calne Our Place' to fund individual units to start us off, along with one or two individual members.



Why **Sensor.Community** in Calne?

Follow on aims:

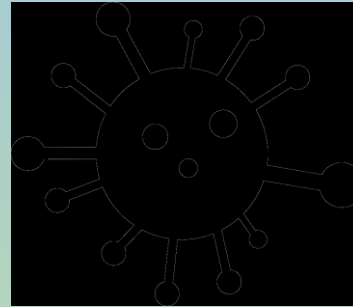
- Got the Town Council involved (success)
- Try to get a calibration arrangement with Wiltshire Council (no success to date)



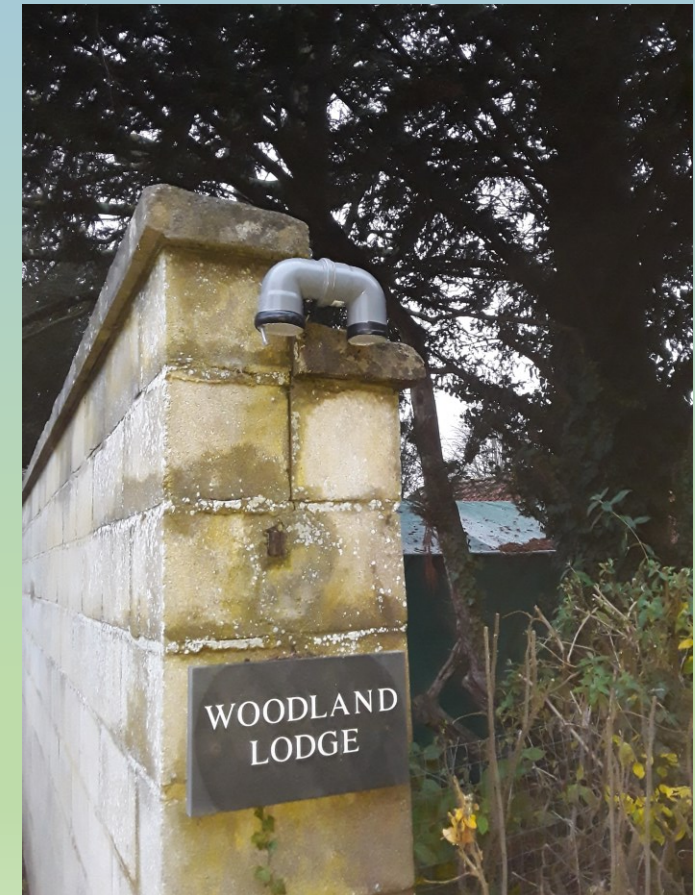
Covid-19 hasn't helped!

Why **Sensor.Community** in Calne?

Covid-19 was on its way:




- Got three private units installed before first Covid-19 lockdown.
- Town Council invested in 10 kits, **7 allocated for Schools**



Why **Sensor.Community** in Calne?

Currently:

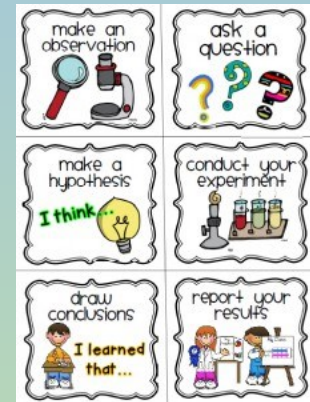
- Starting to build a schools programme linked into upper Keystage 2 (ICT) curriculum, to build and deploy AQM devices.
-  mature student now working with us.





Success for **Sensor.Community** in Calne?

- Heightened pupil & parent awareness of AQ through **schools engagement**
- Greater community AQ awareness, through **ubiquitous access to graphical data**



...Transforming local authority action to improve AQ

- Ongoing deployment of wider AQ monitoring devices covering other pollutants.

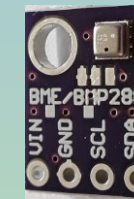
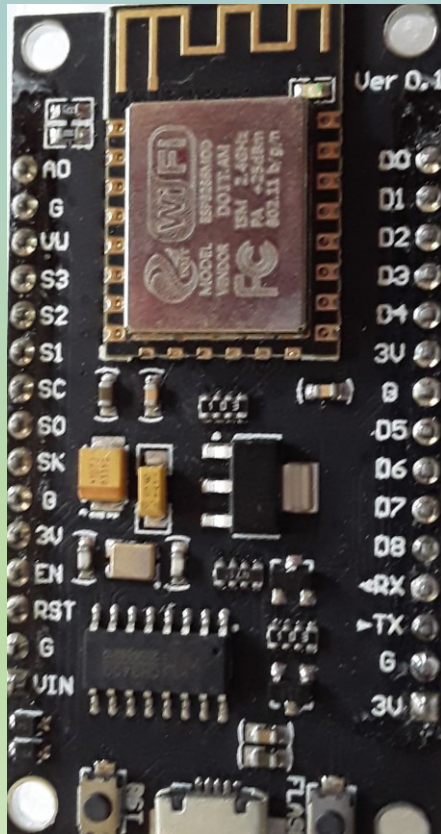
What **Sensor.Community** in Calne?

The Sensor Device

- USB 5vDC powered
- Local Wifi Streaming
- Working on a Solar version with battery backup
- Innovative use of drain pipe!



The Sensor Active Components



- ESP8266 V3 Microprocessor/WiFi
- SDS011 PM Laser Sensor
- BMP280 Sensor
(Temp/Humid/Air pressure)
- 5vDC USB Plug-top Power supply
- **and two drainpipe elbows!**



And lastly – something completely different:

A Solar PV Discount Buying Scheme
off shoot project...

Calne Solar Panel Audit

Anyone interested in doing some

Google Earth based Solar Panel installation

Auditing across CALNE for us?



Can I end with a favourite quote from the late John Ebdon, one time director of the London Planetarium and Radio 4 Humourist.

“Anyway, if you have been, thanks for listening”

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