# EVENT REPORT

## Title of Event: D.T3.12.1

### 1. Workshops for citizens and stakeholders; Calculation and design of design variants, a determination of the "Candidate Design". First impulses for a project structure plan for the and studies and discussion to possible sites where the " Candidate Design" could be located

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| **Date & Place of Event:** | Finalised 05.01.21, small working groups Nov.-Dez. 2020 / Pfaffenhofen |
| **Partner/s Involved:** | PP09 Citizen Cooperative Pfaffenhofen |
| **Relation to Project:** | Meeting with citizen and stakeholders for calculation and design of design variants, a determination of the "Candidate Design" of the CO2-Apocalypse-Clock regarding the pilot action of PP09 |
| **Topics tackled and description of links to deliverables/outputs** | - Start of the work<br>From a research, different sand clocks could be found. The following photos served as a stimulus to start the work and to find new ideas from the citizens for a realisation.<br>  <br>  <br>*Caption: Mobile hourglass on a truck. It is intended to indicate the residual CO2 budget.*<br>*Source: https://logistra.de/news/nfz-fuhrpark-lagerlogistik-intralogistik-co2-emissionen-verkehrssektor-g20-staaten-als-treiber-16740.html* |
| **Expected effects and follow-up, findings/conclusions that will contribute to achieving further project results** | - Findings:<br>Results of the realisation of a 2-dimensional CO2 apocalypse clock<br>A 3-dimensional version of a CO2 apocalypse clock was discarded after about a month's work for technical and cost reasons.<br>A 2-dimensional version was then decidedly planned. In the following, the individual steps for the realisation of the planned 2-dimensional CO2 apocalypse clock are shown in an overview. This includes: |

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| | Calculations Creation of the "Design Candidate", selection and construction of components, construction drawings of the "Design Candidate" and the work breakdown structure for the construction of the CO2 apocalypse clock.<br><br>The definition of the design parameters for a 2-dimensional design was done first.<br><br>- Set-up study of the 2-Dimensional CO2 Apocalypse Clock:<br><br>Studies were carried out in a working group to examine certain installation sites and then visualise them as well. The results were presented to those responsible and discussed in detail. The management consultancy Dr. Muthig was again in charge.<br><br>Among others, the Bürger-Park at the Arlmühle or the originally planned site on the market square in Pfaffenhofen were shortlisted.<br><br>However, projections / light installations were also worked out. These are shown below.<br><br>Preparation for meetings with decision-makers in the city of Pfaffenhofen<br><br>Especially under the leadership of the management consultancy Dr. Muthig, a variety of results were developed in exchange and cooperation with citizens and politically experienced citizens. These results were prepared by 05.01.21 to such an extent that the results could serve as a basis for the discussions with political decision-makers, responsible persons of the city of Pfaffenhofen as well as other stakeholders. |
| **Type of audience reached (project target groups)** | Numbers of reached target groups in the framework of event: |

| TARGET GROUP | VALUE |
|---|---|
| LOCAL PUBLIC AUTHORITY | 1 |
| REGIONAL PUBLIC AUTHORITY | 0 |
| SECTORAL AGENCY | 1 |
| INFRASTRUCTURE AND PUBLIC SERVICE PROVIDER | 1 |
| INTEREST GROUPS INCLUDING NGO's | 0 |
| HIGHER EDUCATION AND RESERACH | 0 |
| BUSINESS REPORT ORGANISATION | 0 |
| GENERAL PUBLIC | 5 |

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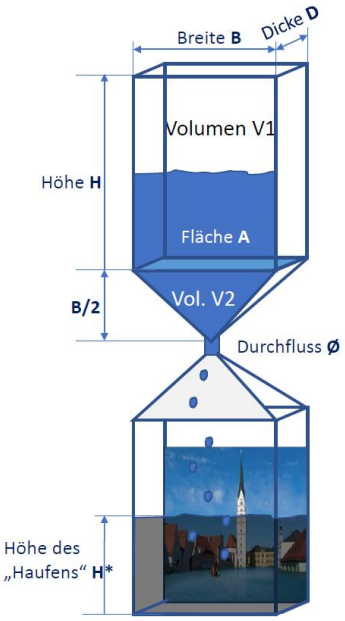
| **Annexes (photo, media coverage web-links ect.,…)** |  <br>**Definition der Design-Parameter 2-Dim**<br>**Volumen:**<br>Vtot = V1 + V2<br>V1 = A*H = B*D*H<br>V2 = B/2*B/2*D<br>also:<br>**$V_{tot}$ = D*[B*H+(B/2)²]**<br>**Gesamthöhe ≈ 2*H + B**<br>**Durchfluss:**<br>**Ø = ΔV/Δt**<br>**Aufwachsen des Rest-“Haufens“:**<br>**ΔH* =ΔV/A = ΔV/B*D**<br>*Dimensioning and design: Results of the Dr. Muthig working group*<br>The following table shows calculations of details of the interpretation of the Apocalypse Clock:<br><br>**VAR 1** B = 0,25 m; H = 1,5 m; D = 0,02 m; Vtot = 0,008 m³ / 7,813 l; T = 15 Jahre; ΔV/Δt = Rate = 0,0005 m³/a; (Ø = ) 0,0014 l/Tag; 1,43 ml/Tag = ccm/Tag; 0,0010 ccm/min; **1,0 µl/min** → Breite; 990,25 nl/min; ΔH =ΔV / A = ΔV / (B*D) **0,10 m/a**; 0,29 mm/Tag; 8,68 mm/Monat; → Höhe; CC in 15 Jahren 0,008 m³<br>Zwi-Rech. VI = 0,008 m³; VII = 0,000 m³; Vtot = 0,008 m³<br><br>**VAR 2** B = 0,5 m; H = 2 m; D = 0,02 m; Vtot = 0,021 m³ / 21,250 l; T = 15 Jahre; ΔV/Δt = Rate = 0,0014 m³/a; (Ø = ) 0,0039 l/Tag; 3,88 ml/Tag = ccm/Tag; 0,0027 ccm/min; **2,7 µl/min** → Breite; 2693,5 nl/min; ΔH =ΔV / A = ΔV / (B*D) **0,14 m/a**; 0,39 mm/Tag; 11,81 mm/Monat; → Höhe; CC in 15 Jahren 0,021 m³<br>Zwi-Rech. VI = 0,020 m³; VII = 0,001 m³; Vtot = 0,021 m³<br><br>Exemplary details for the glass panes of the CO2 apocalypse clock are shown in the following construction drawing (left). A selected micropump and a selected driver set can be seen on the right. The construction drawings and selection of components were carried out by the Dr. Muthig working group in November and December 2020: |

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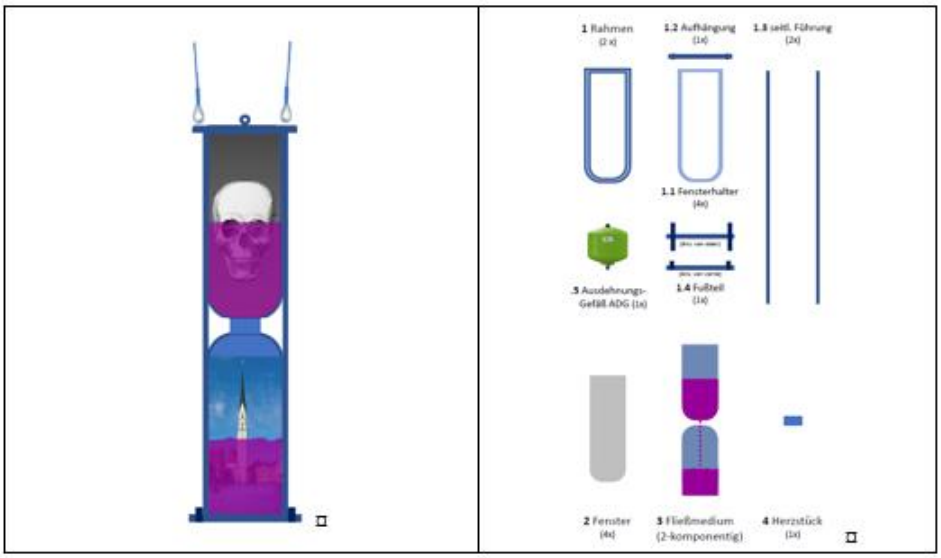
The following image shows an overview of the result of the "Candidate Design" of the working group meeting at the end of 2020; system and components:




In addition, a work breakdown structure for the construction of the pilot project of the CO2 apocalypse clock (2-dimensional version) was prepared:

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| 0 | CO2 Apocalypse Clock | 1 Stk. |

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| 1 | Rahmen (Fensterauflage) | 2 Stk. |
| 2 | Fenster | 4 Stk. |
| 3 | Fließmedium | 1 Stk. |
| 4 | Herzstück | 1 Stk. |

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|---|---|---|
| 1.1 | Fensterhalter | 4 Stk. |
| 1.2 | Aufhängung | 1 Stk. |
| 1.3 | seitl. Führung | 2 Stk. |
| 1.4 | Fußteil | 1 Stk. |
| 1.5 | Ausdehnungsgefäß | 1 Stk. |
| 4.1 | Mechan. Zwischenstück | 1 Stk. |
| 4.2 | Pumpe und Ansteuerung | 1 Stk. |
| 4.3 | Schläuche, Ventile, Verb., | |

Set-up study of the 2-Dimensional CO2 Apocalypse Clock:

City·Hall·of·Pfaffenhofen¶

Church·tower·in·the·city·of·PAF¶

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