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Experiencing Augmented Reality for Cultural Heritage Applications in iVET

Program: Erasmus + KA2 Strategic Partnerships
(Vocational education and training)
Project reference number:
2018-1-DE02-KA202-005088

Start: November, 2018
End: April, 2021

Bringing culture to the 21st century and in all our pockets!

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Project Partners

Staatlich anerkannte, private
Fachhochschule des
Mittelstands (FHM)

CCS
Digital Education

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e delle risorse umane

PAIZ
POLSKO-AMERYKAŃSKI
INSTYTUT ZARZĄDZANIA

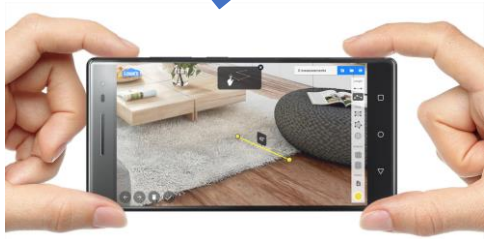
Nikée
ROERMOND

National
Association of
Resource
Teachers - Bulgaria

Mixed Reality (MR)

Paul Milgram et al. (1995): Reality-Virtuality (RV) Continuum

Real Environment — **Augmented Reality (AR)** — **Augmented Virtuality (AV)** — **Virtual Enviornment**

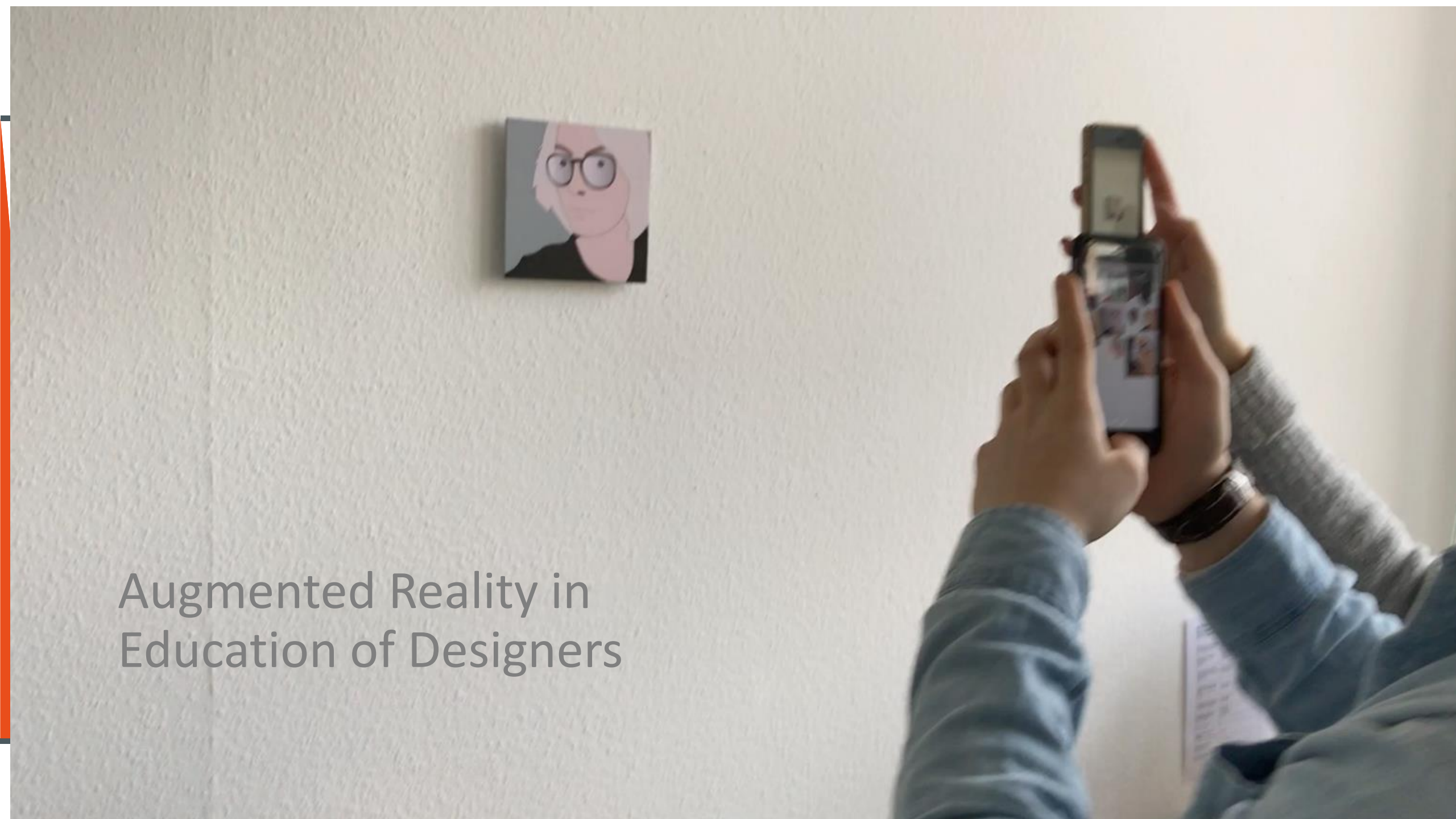


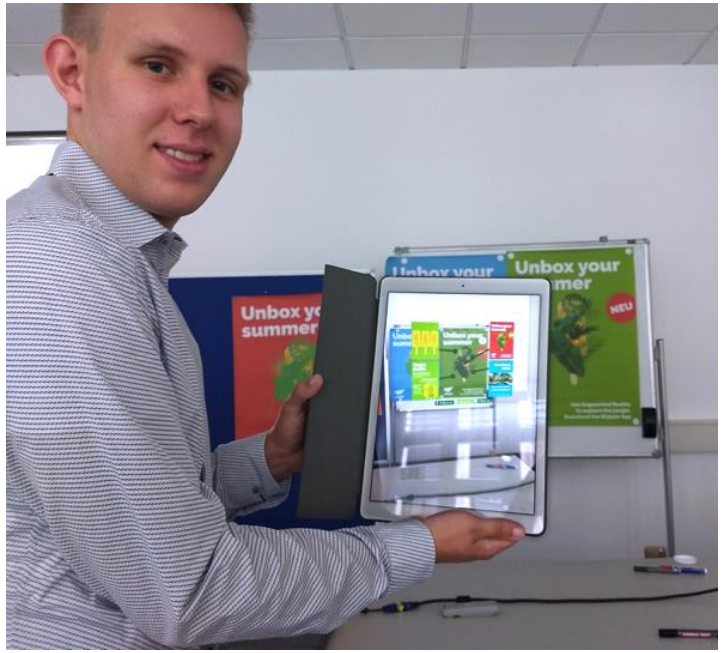
Apple · Google · Microsoft HoloLens · oculus · VIVE

Wikitude · ARCore · magic leap · DAQRI · neurable

ARKit · unity · UNREAL ENGINE

Augmented Reality in Education of Designers





Augmented Reality in Advertising (BA Thesis)

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Augmented Reality in a MINT Lesson

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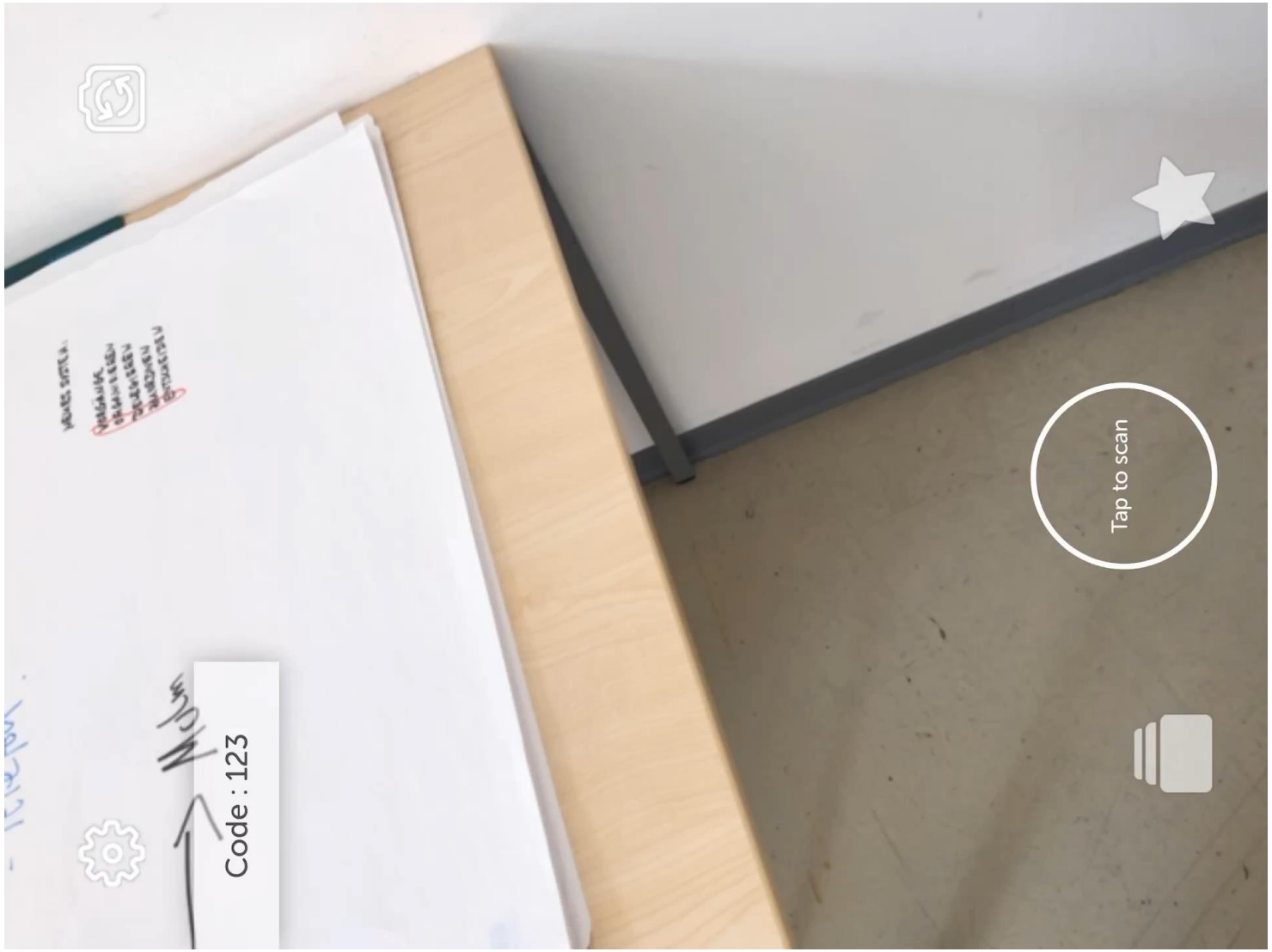
Augmented Reality in a MINT Lesson



Augmented Reality in a multi medial Exhibition about Future of Small and medium-sized enterprises

CultApp in a nutshell

- ✓ **Main objective**: How can we inspire young school learners for Europe's Cultural Heritage (CH) by using Augmented Reality (AR)?
- ✓ **Target groups:**
  - ✓ Young learners from VET institutions
  - ✓ Teachers (Graphic Design, Art, History…)
- ✓ **Beneficiaries:**
  - ✓ VET schools
  - ✓ Local and regional culture promoters

CultApp in a nutshell

Impact:

- ✓ increased digital competence of learners and teachers
- ✓ Improved creativity and innovation of learners
- ✓ Innovative teaching and learning approaches at VET schools
- ✓ Raising awareness of Europe's Cultural Heritage

CultApp in a nutshell

Expected outputs:

1) AR meets CH: Compendium of AR practices applied to CH
   available: http://cultapp.eu/compendium-of-augmented-reality-technologies
2) Online teacher training programme
   currently in development
3) Augmented learning project work
   Starts September 2020

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Two of five Cooperation Partners from iVET

Interviews with iEVT Students and Teachers at Berufskolleg Waren

AR-Workshop with iEVT Teachers at Berufskolleg Senne, Bielefeld

Output 2: Online Teacher Training Programme (05-2020)

Course title: *Augmented Reality for Cultural Heritage Education (AR4CHE)*

Course objectives:

- To enable teachers to integrate CH-related topics into their professional activities by using AR
- In particular, to empower teachers to plan, develop, implement, and evaluate pedagogical activities for promoting CH via AR
- Pilot will start in Februar 2020. Publicly accessible May 2020

Online Teacher Training Programme

Learning outcomes:
Upon completing the training course, attendees will be able:

- to assess the impact on and benefits for teaching and learning in the context of Cultural Heritage education
- to design and implement suitable pedagogical scenarios for Cultural Heritage-related subjects using AR
- to foster learners' curiosity and motivation to learn CH-related topics through AR.

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Online Teacher Training Programme

Project Models: ADDIE Model / Design Thinking

We suggest using a mix of ADDIE and Design Thinking methods. We believe, the combination of both techniques might perfectly support the teachers when designing and implementing their learning project!

Analysis
Design
Development
Implementation
Evaluation

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Output 3: Augmented learning project (09-2020)

Learners

Teachers

Public audience

AR Project Plattform

AR Tool

Contents

texts | nages | audio | video

2D Graphics | 3D Graphics

Cloud

AR Scenes (experiences)

Mobile Devices + mobile AR-Browser

Sources

Locations | Objects | Paintings | Buildings

Literature | Libaries | Museums | Exhibitions

Experts | Partners | Institutions

Online Teacher Training Programme

Target groups:

- iVET teachers of Art, History, Media Design and/or production.
- teachers from secondary schools or higher education sector dealing with related subjects
- cultural workers, personnel from museums, tourism agencies, city municipalities engaged in promoting cultural assets and touristic destinations

Online Teacher Training Programme

Main features:

- **Workload:** 2 ECTS (60 hours)
- **Delivery format:** LMS Moodle (www.ar-cultapp.eu - under construction

Type of study: asynchronous online self-study

- **Course structure**: 5 modules
- Certification
- Free of charge

Online Teacher Training Programme

5 modules of AR4CHE course:

- **Module 1:** interconnecting Cultural Heritage, Education, and Augmented Reality
- **Module 2:** AR – how it works from the technological viewpoint
- **Module 3:** AR content production
- **Module 4:** Project Exercises
- **Module 5:** How to set up an AR project applied to CH in the class

Colemine Essen All Changes Saved

Undo Redo History Preview Publish

Elements | Widgets | Uploads

Audio B

Calendar

Email Facebook

Gallery Instagram

LinkedIn PDF

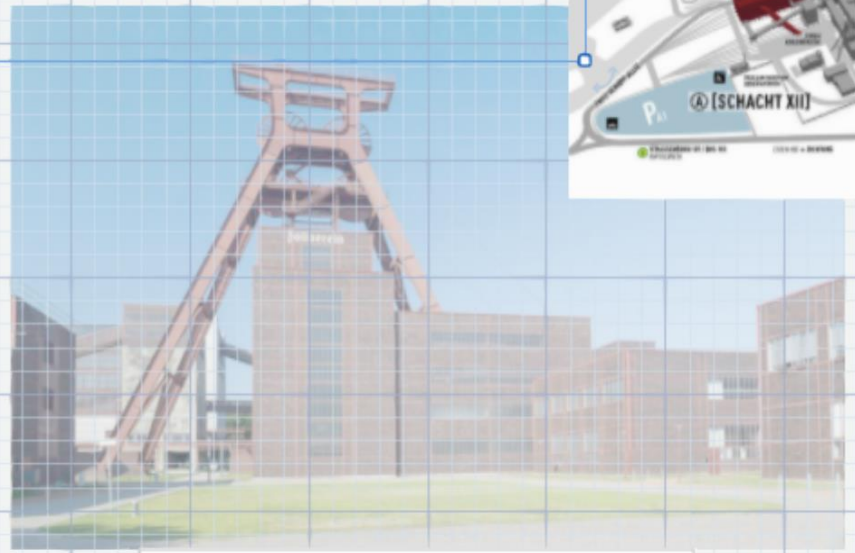
Take a Selfie Pinterest

Go To Scene SMS

SoundCloud Spotify

Twitter Video

AR tool, for exemple:
https://www.blippar.com/build-ar



The Zollverein industrial complex, Essen, Nordrhein-Westfalia

The colliery Zollverein was an active from 1851 to 1986 hard coal mine in Essen. It is today an architectural and industrial monument. Together with the directly adjacent coking plant Zollverein, the mines 12 and 1/2/8 of the mine have been UNESCO World Heritage Sites si

Scene 1

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Gallery

Layout

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Scale
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Basic properties

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Motion Effects

Animation Layers
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Menü anzeigen

Online Teacher Training Programme

Interested in participating in the AR4CHE course?

Follow CultApp developments at www.cultapp.eu!

- Test of the AR4CHE course: February - April 2020
- Evaluation and final adjustments: May - September 2020
- Free access to the AR4CHE course: starting from October 2020

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