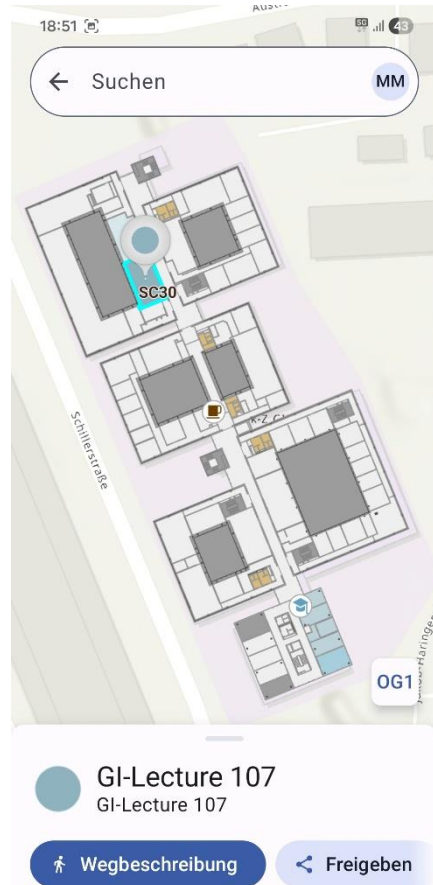




CampusMap für die Universität Salzburg

Esri User Conference Austria - powered by SynerGIS

22. Oktober 2025

Manfred Mittlböck



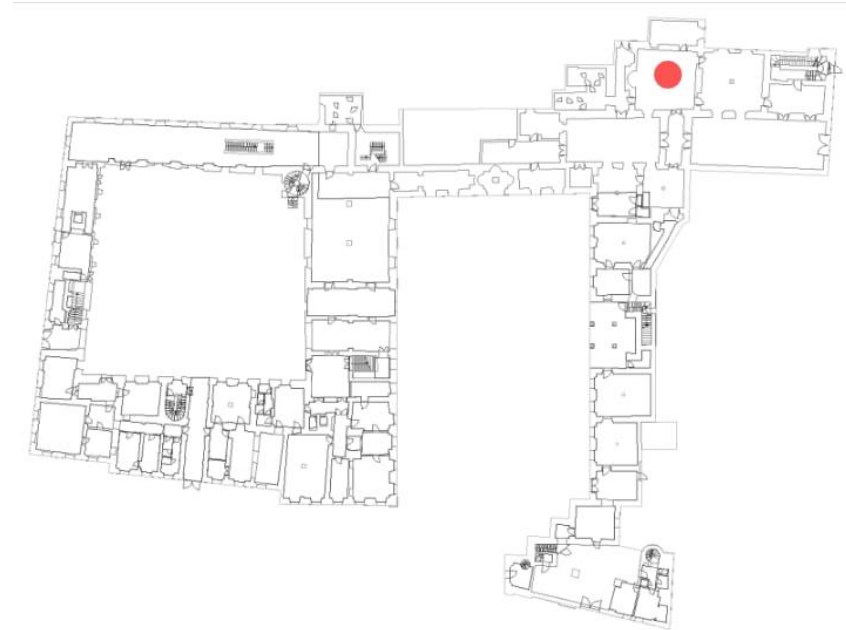
CampusMap

- Situation@
University of Salzburg
 - extensive network of over **26 locations**
 - both within and beyond the city,
 - -> presents a significant challenge for students and faculty



CampusMap: Status quo?

- -> Goals
 - orientation & navigation
 - (blue dot outdoors and *in* the building)
 - Connection to public transport information
 - accessibility information
 - security management
 - support for room booking
 - connection with existing data services (e.g. Pluonline room management)
 - Safety & fire protection training
 - identification & commitment for students and staff
 - public relations
 - (e.g. discovery tours with 360° images)

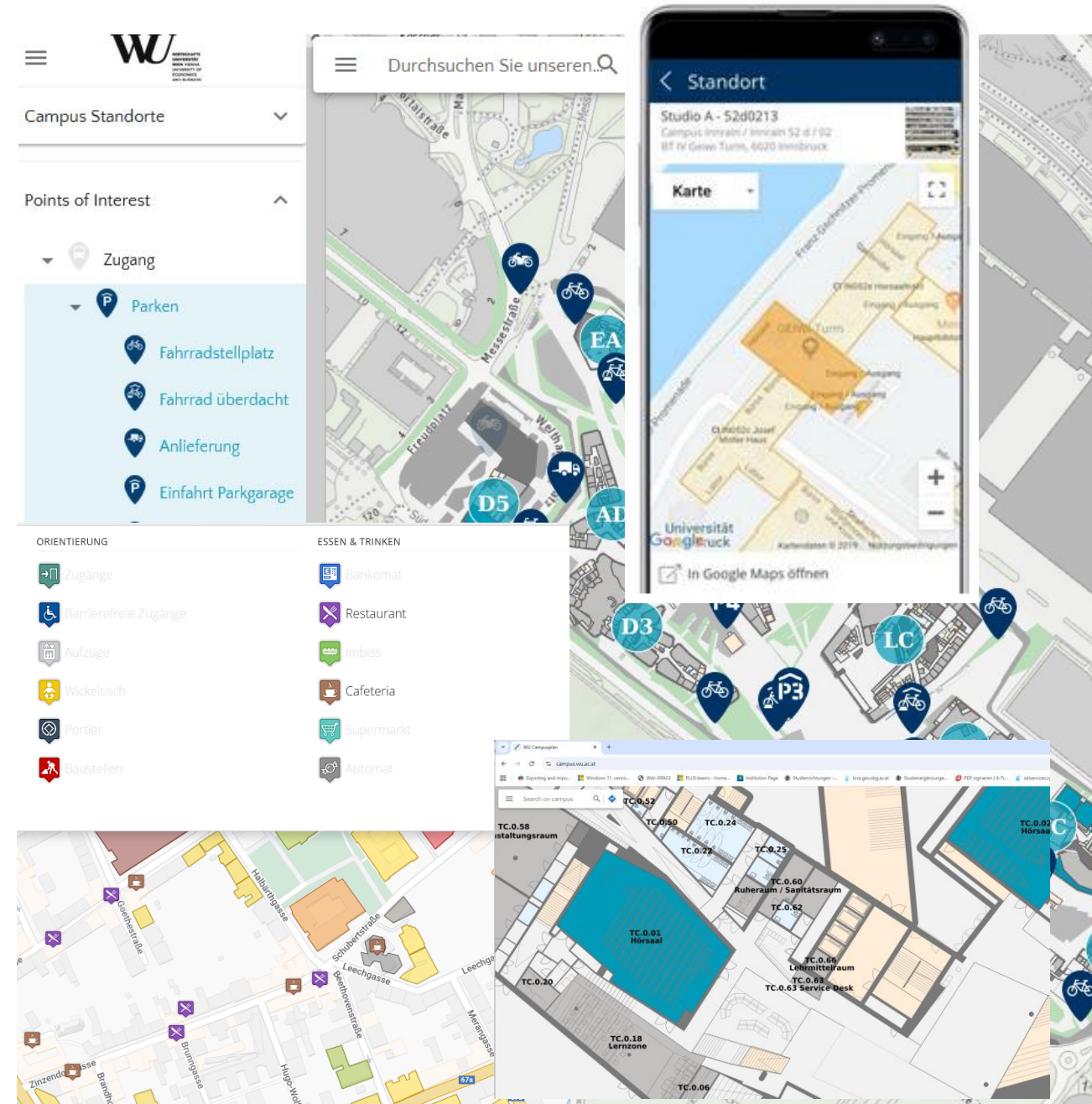




Digital Campus Map

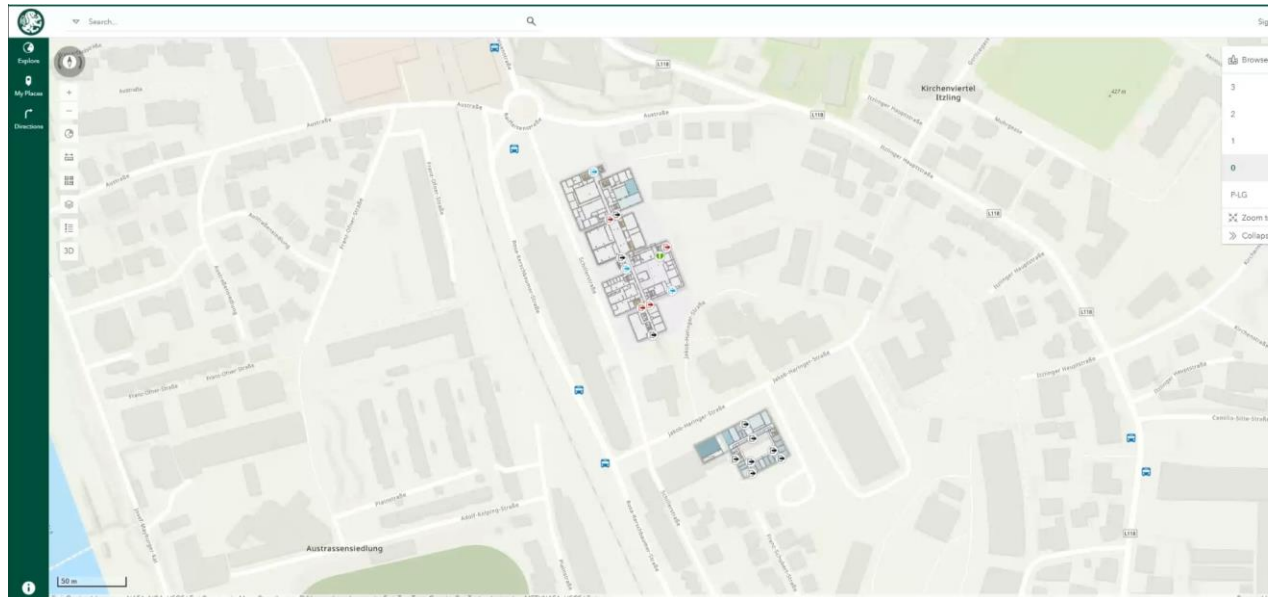
Other approaches

- Existing applications
 - INDRZ indoor maps
 - Open Source
 - Company support GOMOGI Geographic Intelligence (Klagenfurt/Wien)
 - Used by
 - Alpen-Adria University Klagenfurt [AAUK]
 - WU Vienna
 - BOKU university
 - Technical university Vienna
 - Campus Online
 - University Graz Graz
 - Campus Wayfinder
 - University Innsbruck (links Google Maps)
 - Static Maps
 - University Salzburg, Technical University Graz, JKU,...
 - Nothing
 - Mozarteum Salzburg, Technical University Leoben ...



Integrierte Campus Map

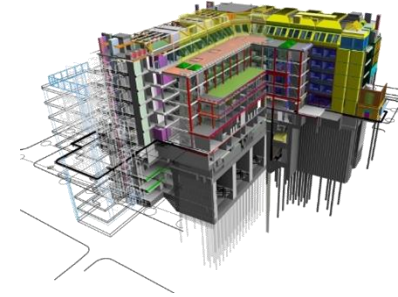
*„Allgemein zugängliches Portal,
um Nutzer*innen der Universität einen einfachen Zugang zu
Informationen zu Gebäuden, Ressourcen und Infrastruktur zu
ermöglichen“*



vgl. Roth et al. 2009



Leveraging existing building information CAD/BIM to GIS - Challenges



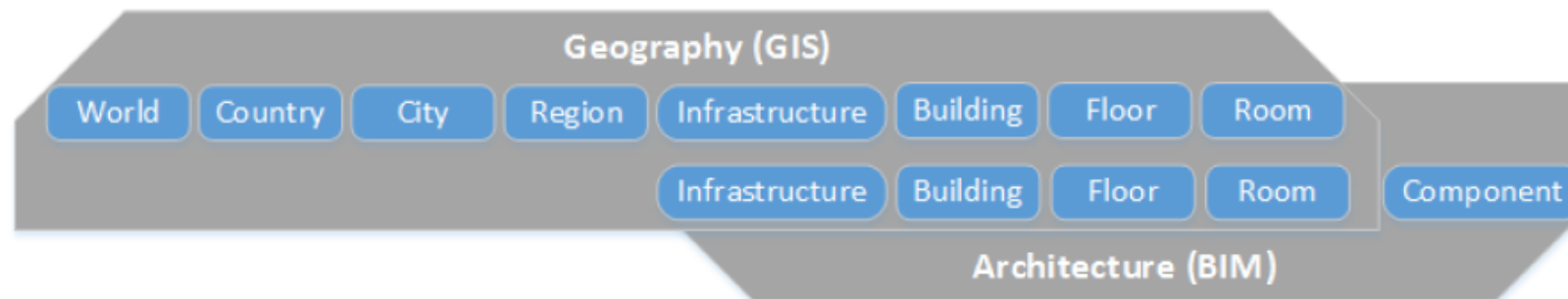
CAD based in lines - Lines are not „smart“



CAD plan might be outdated



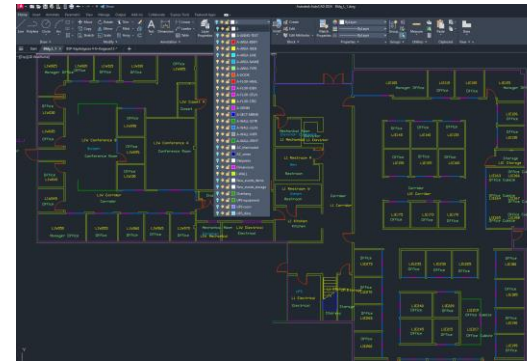
BIM in many cases too detailed for abstract integration in GIS



Rod to Campus Map

Current approaches for indoor representation

- Architecture-Engineering-Construction – AEC:
 - Worldwide - Building Information Modelling (BIM) with Industry foundation classes (IFC)
 - US: A/E/C CAD Standard
 - Austria: National Standards for building plan documentation
 - CAD/BIM Standard ON A6241-1
- GIS
 - OGC Indoor GML
 - OGC Indoor Mapping Data Format (IMDF)
 - ESRI ArcGIS Indoors Information Model



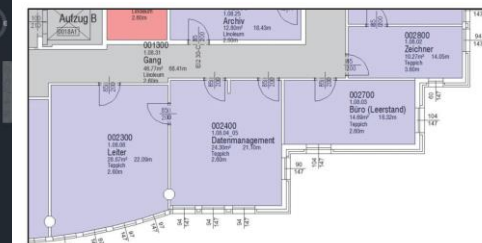
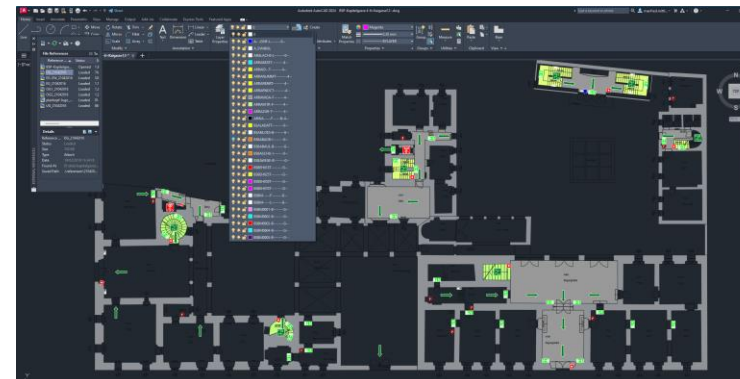
A/E/C CAD Standard

Release 4.0

July 2009

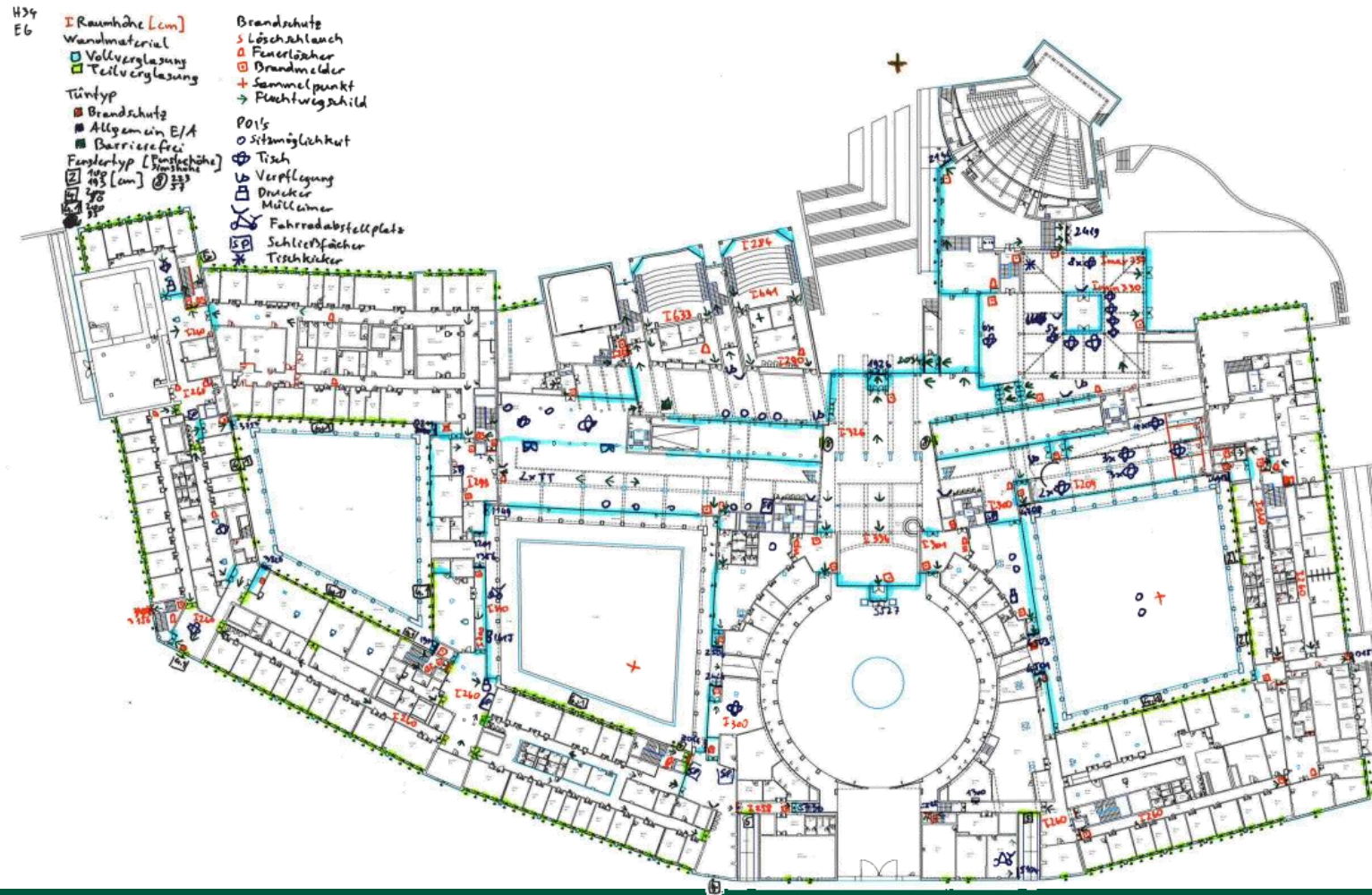


The A/E/C CAD Standard is compliant with Version 4.0 of the U.S. National CAD Standard. The A/E/C CAD Standard contains supplemental materials and CAD specific requirements not addressed in the U.S. National CAD Standard.

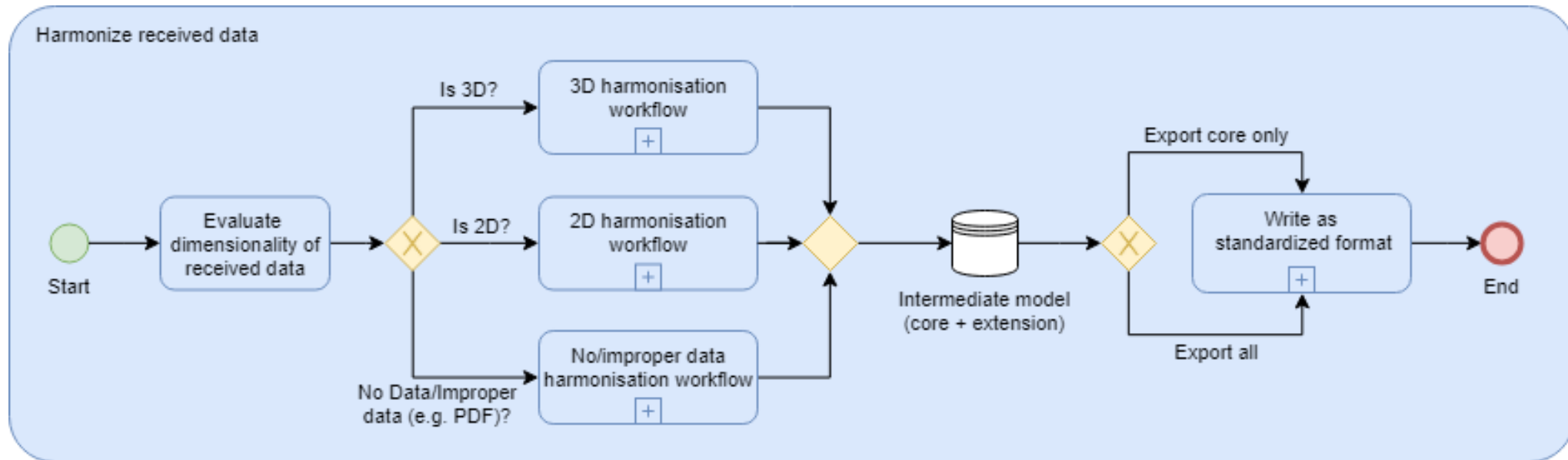




Digital Campus Map – Gebäudebegehungen

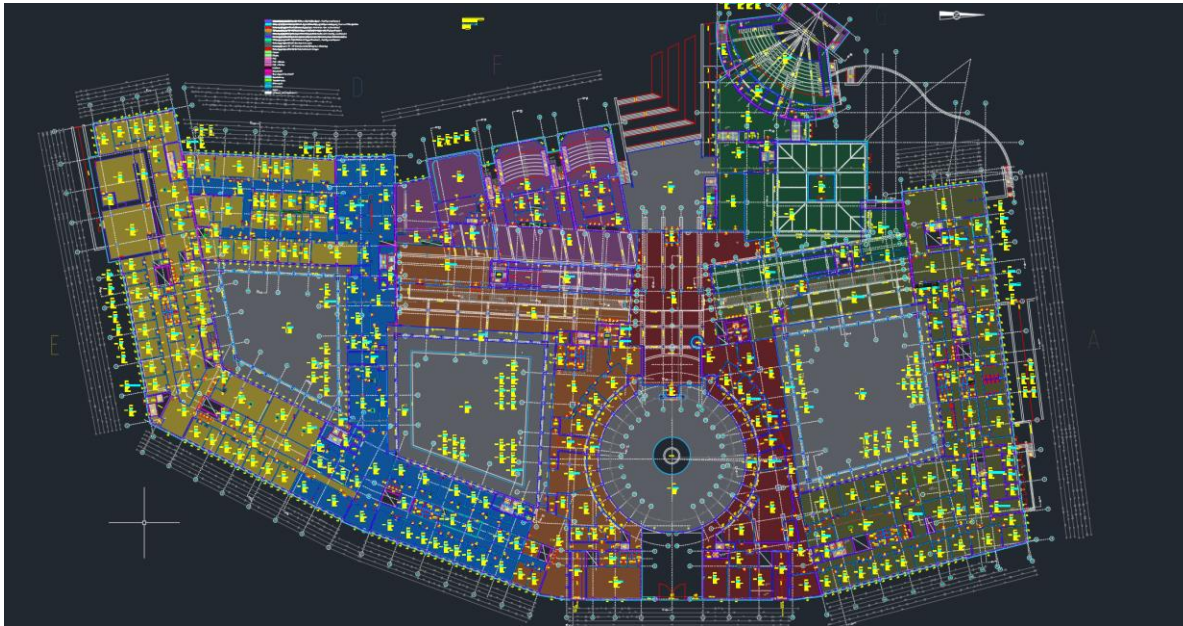


Generalized CAD to GIS Integration workflow

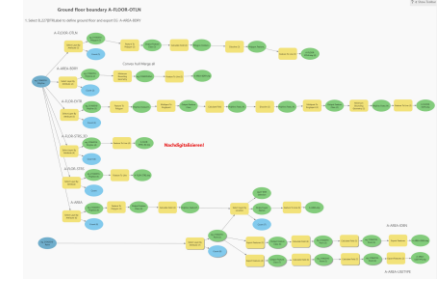
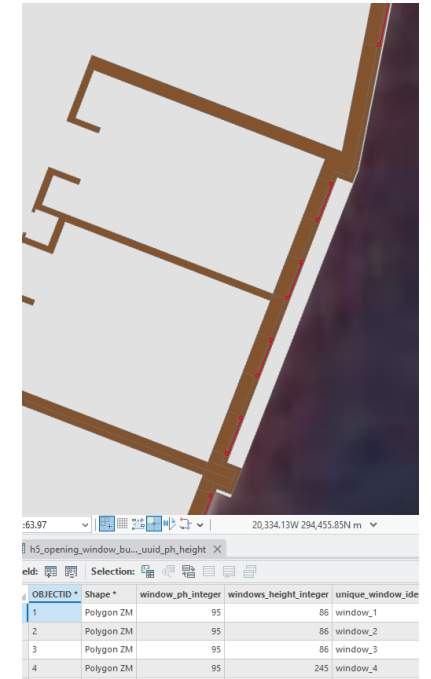
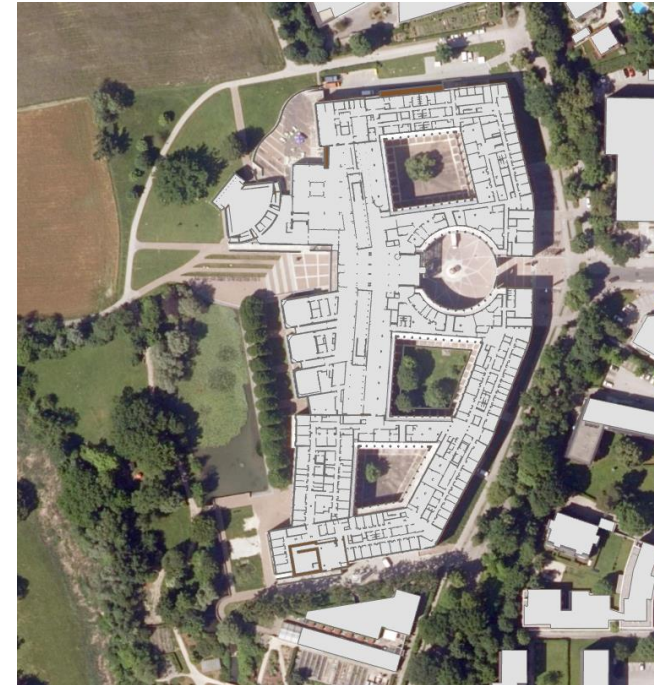


Strategy Freisaal: CAD lines => GIS objects

CAD plan H34 EG (lines) –
ON 6241-1

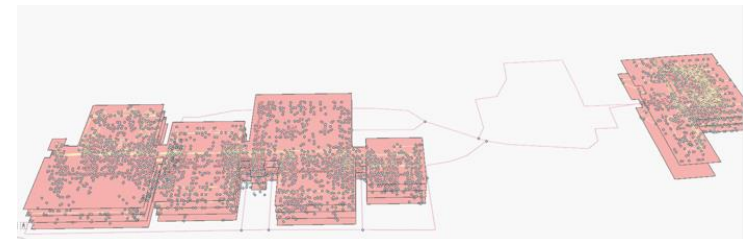
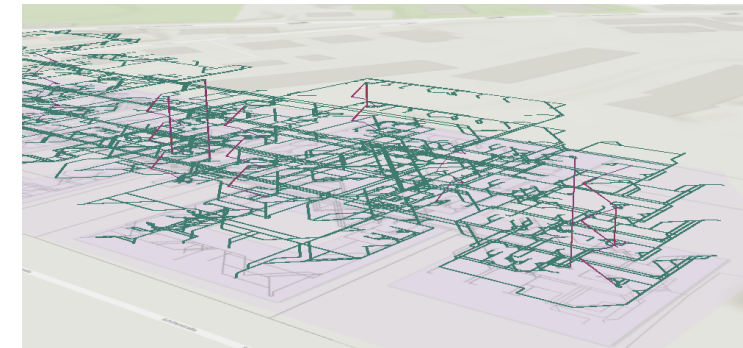
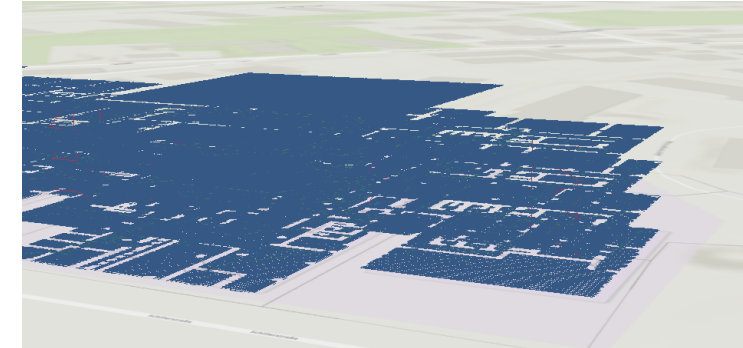
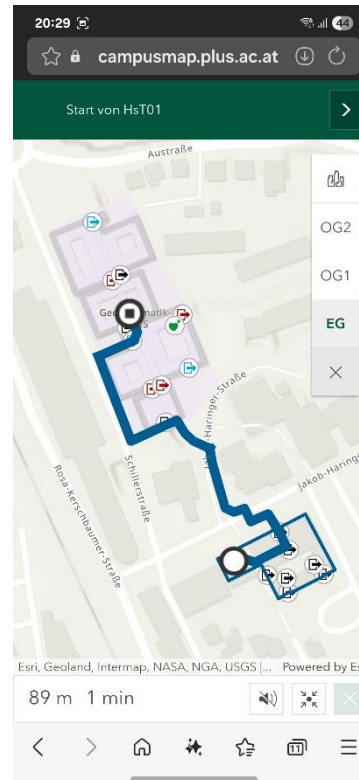


GIS Plan: walls & windows H34 (objects)

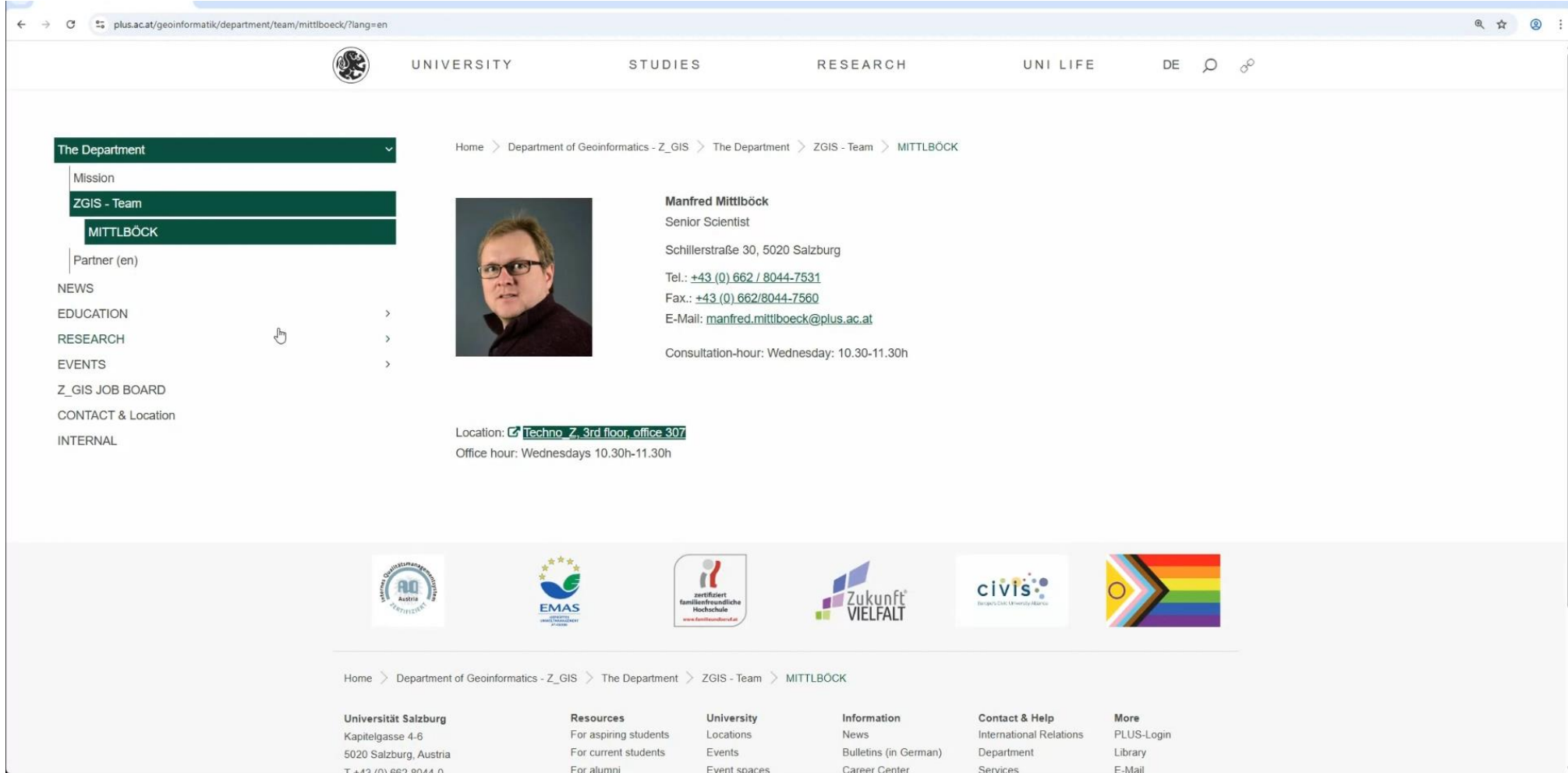


Status Prototype: campusmap.plus.ac.at 2D/3D

- Directions 2D/3D
 - desktop & mobile
 - 2 modes:
 - walking
 - accessibility needs
 - between facilities
 - in facilities
 - room – POI – room
 - POI – POI
 - Defined categories
 - generating QR codes



Status Prototype: Orientation & Navigation 2D



The screenshot displays the website of the University of Salzburg, specifically the profile page for Manfred Mittlböck. The browser address bar shows the URL: plus.ac.at/geoinformatik/department/team/mittlboeck/?lang=en. The website features a navigation menu on the left with categories like 'The Department', 'Mission', 'ZGIS - Team', 'MITTLBÖCK', and 'Partner (en)'. The main content area includes a breadcrumb trail: 'Home > Department of Geoinformatics - Z_GIS > The Department > ZGIS - Team > MITTLBÖCK'. A profile picture of Manfred Mittlböck is shown next to his name and title, 'Senior Scientist'. His contact information is listed: 'Schillerstraße 30, 5020 Salzburg', 'Tel.: +43 (0) 662 / 8044-7531', 'Fax.: +43 (0) 662/8044-7560', and 'E-Mail: manfred.mittlboeck@plus.ac.at'. His consultation hours are 'Wednesday: 10.30-11.30h'. Below this, his location is specified as 'Techno Z, 3rd floor, office 307' and his office hours as 'Wednesdays 10.30h-11.30h'. The footer contains various logos (AQ Austria, EMAS, Familienfreundliche Hochschule, Zukunft Vielfalt, civis) and a table of links organized by category: University (Locations, Events, Event spaces), Information (News, Bulletins, Career Center), Contact & Help (International Relations, Department, Services), and More (PLUS-Login, Library, E-Mail).

plus.ac.at/geoinformatik/department/team/mittlboeck/?lang=en

UNIVERSITY STUDIES RESEARCH UNI LIFE DE

The Department

Mission

ZGIS - Team

MITTLBÖCK

Partner (en)

NEWS

EDUCATION

RESEARCH

EVENTS

Z_GIS JOB BOARD

CONTACT & Location

INTERNAL

Home > Department of Geoinformatics - Z_GIS > The Department > ZGIS - Team > MITTLBÖCK



Manfred Mittlböck
Senior Scientist

Schillerstraße 30, 5020 Salzburg

Tel.: +43 (0) 662 / 8044-7531

Fax.: +43 (0) 662/8044-7560

E-Mail: manfred.mittlboeck@plus.ac.at

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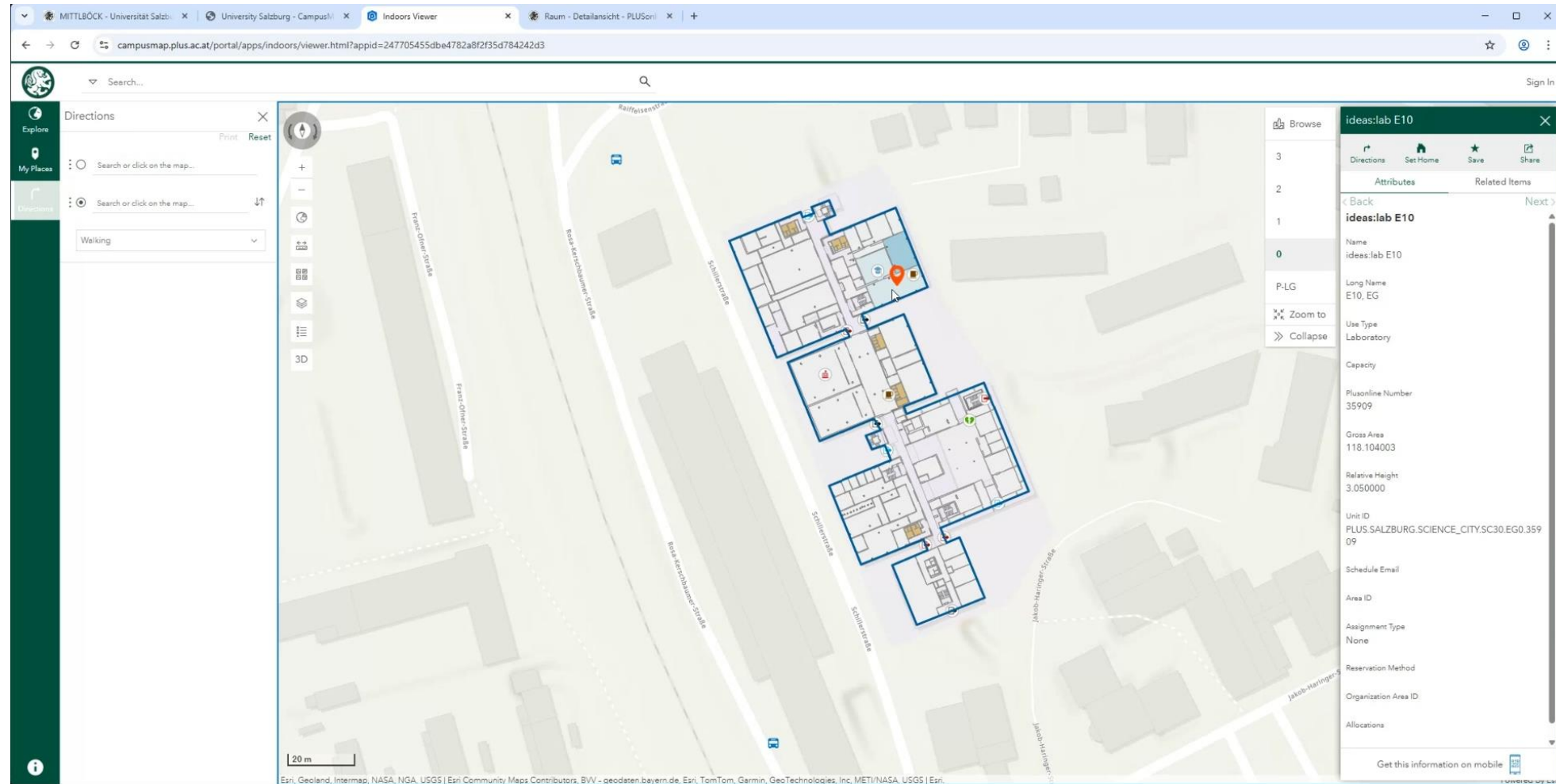
     

Home > Department of Geoinformatics - Z_GIS > The Department > ZGIS - Team > MITTLBÖCK

Universität Salzburg	Resources	University	Information	Contact & Help	More
Kapitelgasse 4-6	For aspiring students	Locations	News	International Relations	PLUS-Login
5020 Salzburg, Austria	For current students	Events	Bulletins (in German)	Department	Library
T: +43 (0) 662 8044 0	For alumni	Event spaces	Career Center	Services	E-Mail

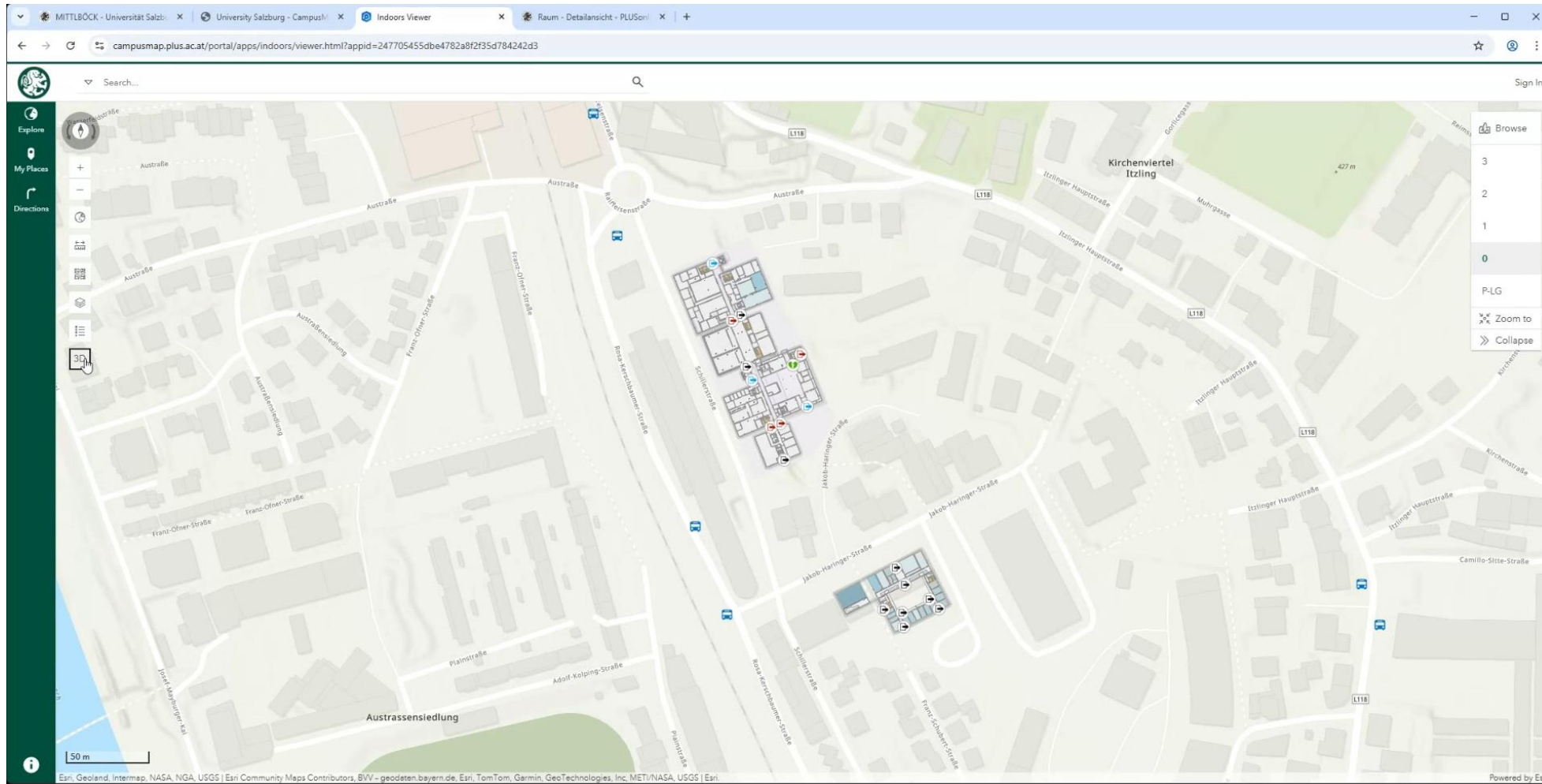


Status Prototype: Safety & Security POIs / categories



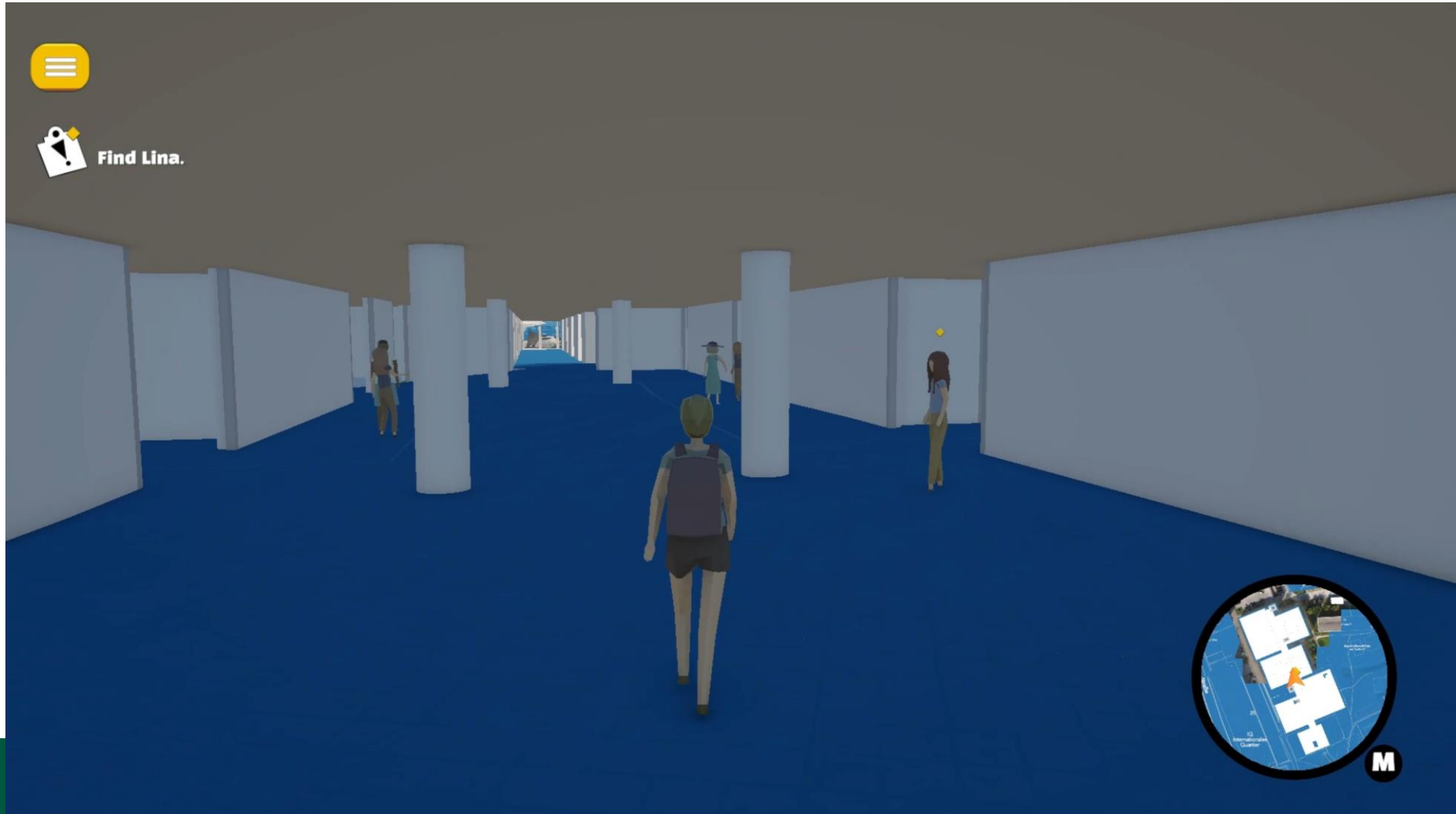


Status Prototype: Orientation & Navigation 3D





Status Prototype: 1st person perspective game



CampusMap für die Universität Salzburg