

# Heidelberg Innovationsforum

**Optimized, objective office space  
planning for facility managers**

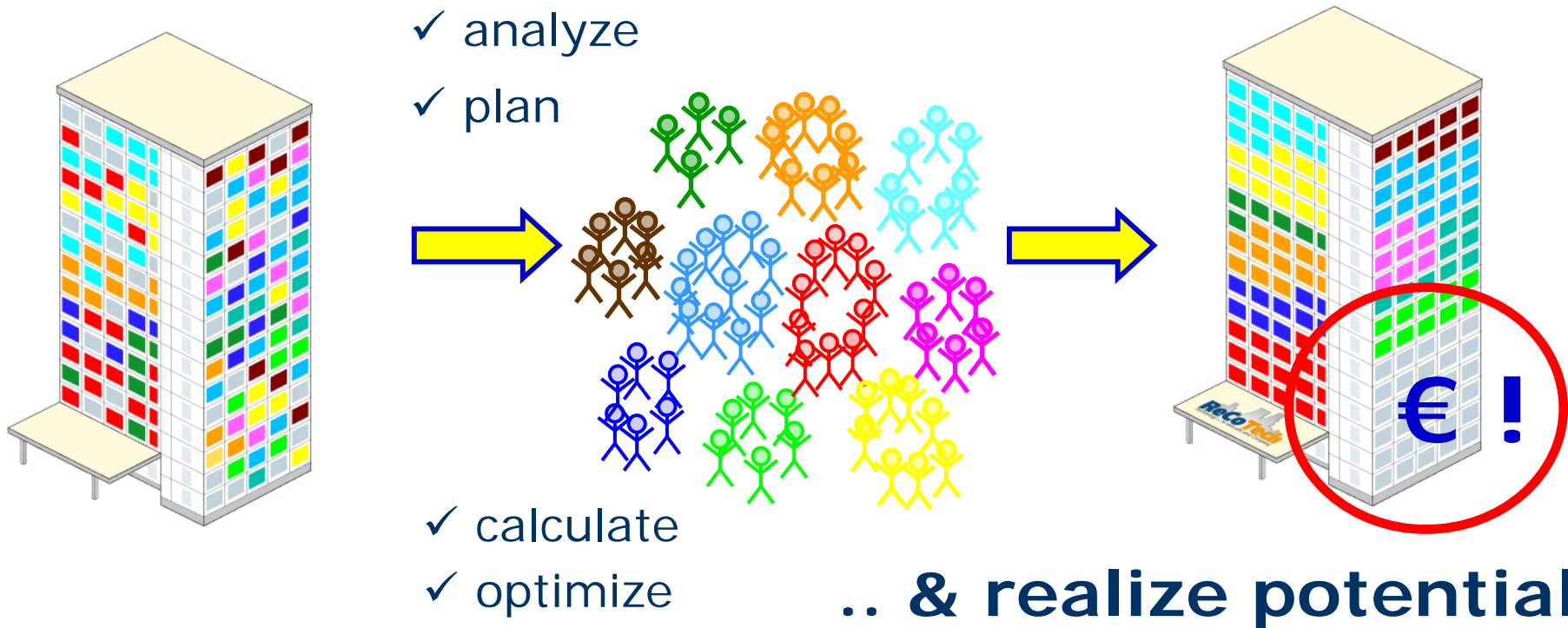
**Dipl.-Math. Michael Marchionini**

# „Floor Space is the real asset

- Floor space is the real productive value of real estate
- Active, profit-oriented real-estate management requires accurate, up-to-date information
- Cost minimization results from defensive strategies and contribute only indirectly to added value..“

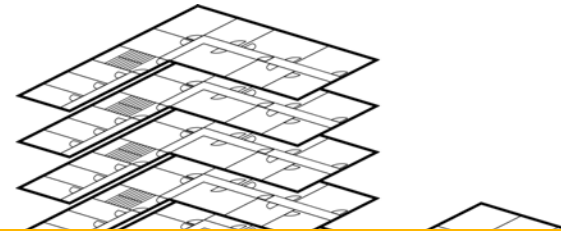
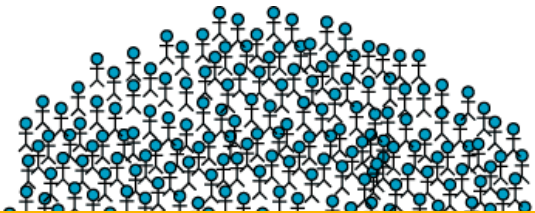
Dr. Andreas Meister, Move Consultants AG, in: Facility Management Solutions 1/03

# There are no computerized solutions to objectively calculate office space allocation ..



# This is due to the huge number of possible solutions to the allocation problem

Distribute a set of interacting and communicating employees



The total number of possible combinations is

$$n! = 1 * 2 * \dots * (n-2) * (n-1) * n$$

For 24 employees, that means  $24! =$

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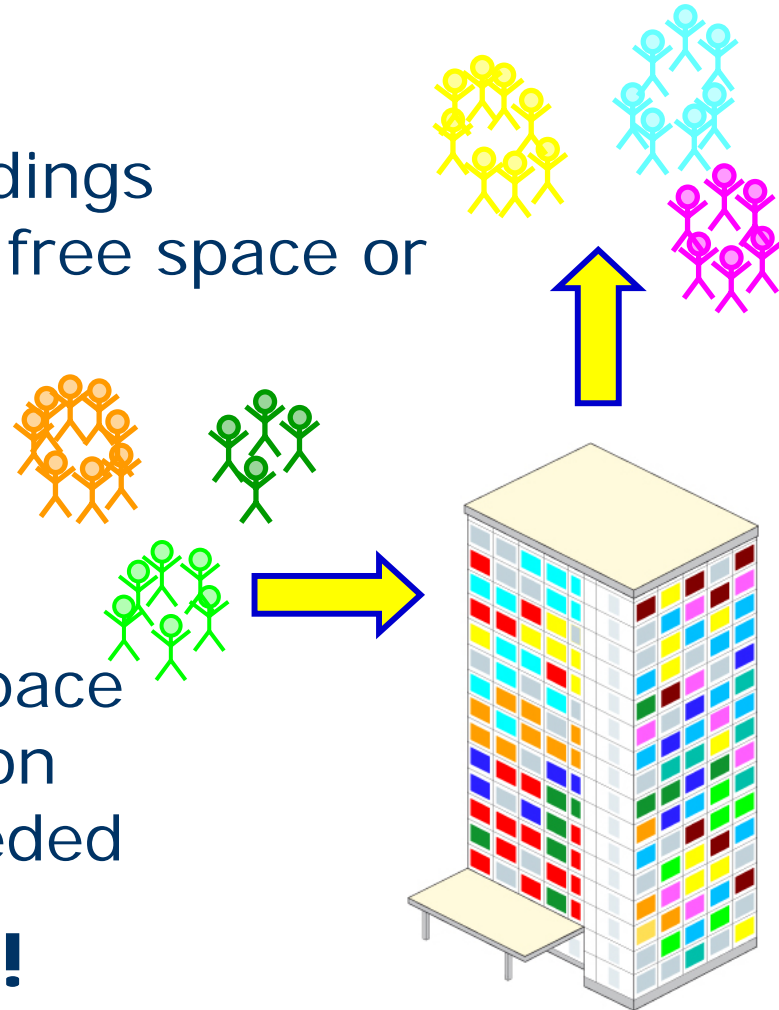
## Standard tasks

- Initial allocation in new buildings
- Consolidation to either gain free space or accommodate more people

taking into account

- the structure of available space
- the needs of the organization
- spatial proximity where needed

**are performed manually!**



**Aggregate spatial demands:** group employees into teams

**Aggregate spatial supply:** optionally define blocks as sets of rooms, ranging from a single room to a whole building

**Reduce** the combinations to about  $10^{30}$  for a typical scenario, additional heuristics reduce it further

**Methods and algorithms:** elementary paths, ports, path graph, room-/blockmetrics, stairs and elevators, campus structures

**Patents are deliberately avoided:** software patents are difficult in the EU, patents are published (algorithms)

**Software license:** including training and optional consulting in the preparation of projects.

**Complementary services:** acquisition / transfer of base data from CAD plans, room- and employee databases.

**Coaching services** to accompany specific projects, develop standards for spatial (office) use and evaluate communication flows throughout the organization.

**Project by commission,** includes the preparation and import of base data as well as the creation of various allocation plans in close coordination with the customer.

**The sale of rights to partners abroad.**

**Customers:** all companies and organizations world wide with large office and administrative groups (municipalities, industry, banks/insurance, utilities, governments,...)

**The value of german municipal real estate alone is estimated at about 800 billion euro**

**Potential buyers** are

- Customers and their facility management teams
- Consulting firms
- CAFM software providers who wish to integrate the technology into their products

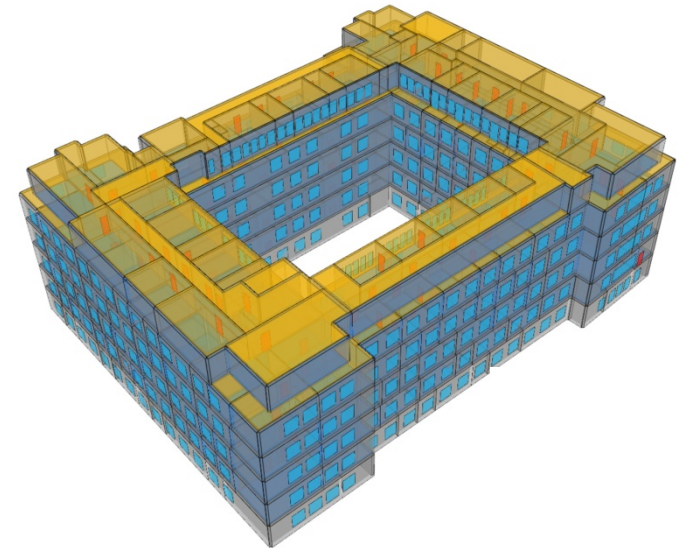
## How many (and which) departments fit into House A?

- If the archives are refurbished as offices?
- If the attic is refurbished and used as office space?

## Two planning scenarios:

New distribution of all office space according to either of these goals:

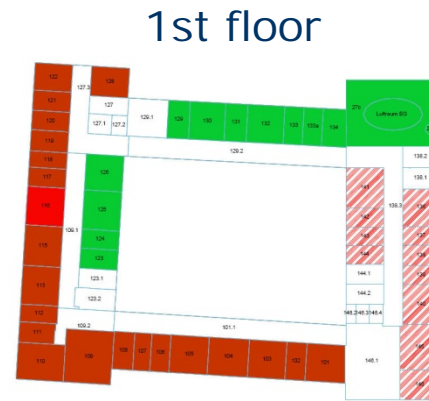
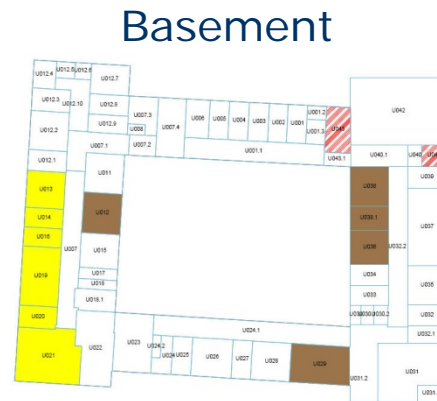
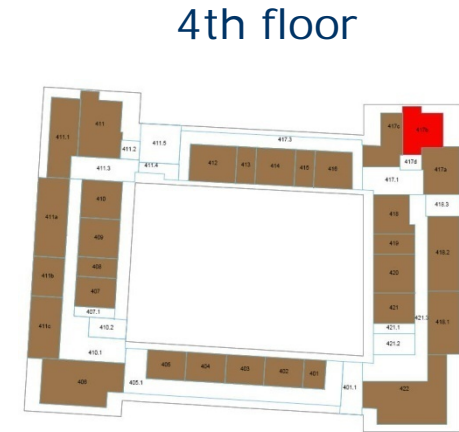
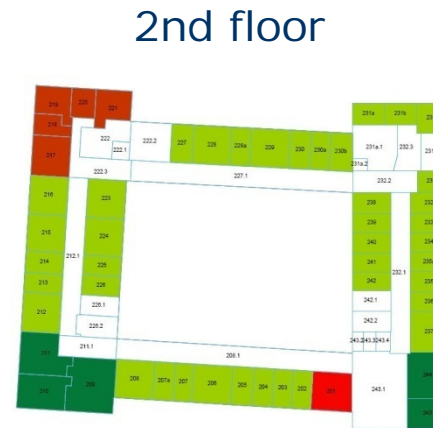
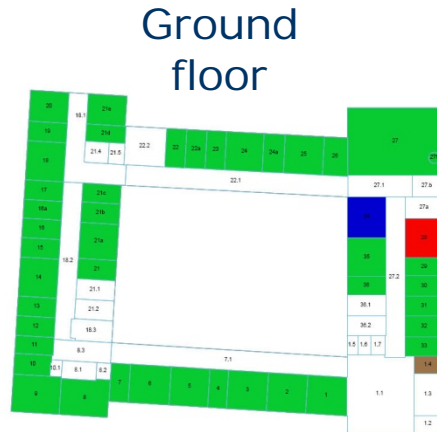
- City administration
- Citizen's services



## Scenario City Administration Building

With „long“  
Staircases

- 10/IT
- Vorbelegung: Freizeichen [Schraffur]
- 61
- Besprechung
- 30
- 10/Rest
- 62
- 18
- 18/2/3/1.4
- SchwBV
- 18/2/3/Keller

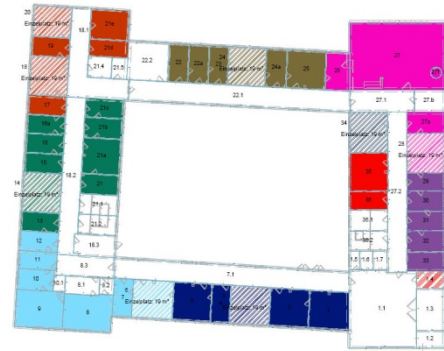


## Scenario City Administration Building

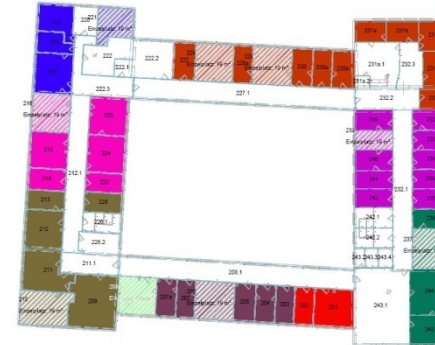
With „long“  
staircases

and detailed  
planning of  
departments

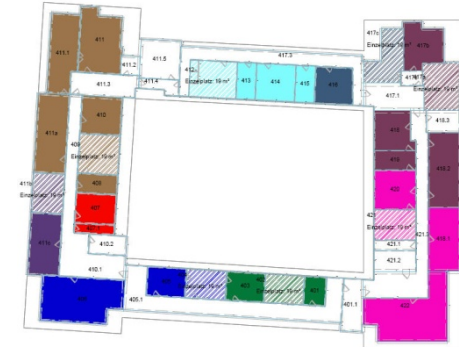
EG



2. OG



4. OG



KG



1. OG

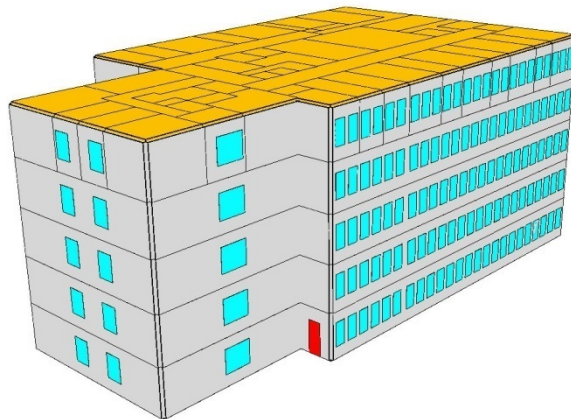


3. OG

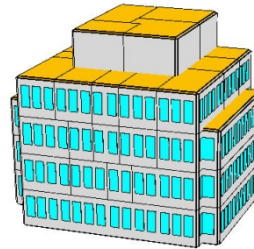


## Allocation planning for:

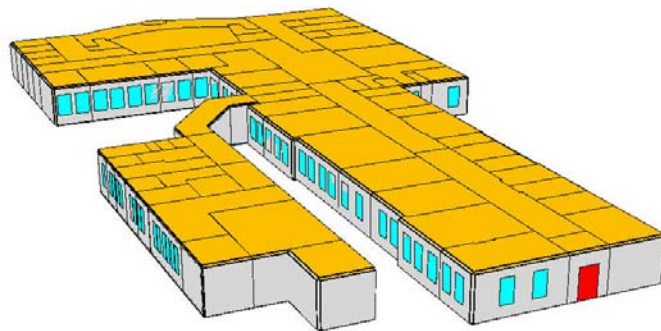
- 18 atomic units
- 90 persons
- 73 rooms
- 4 buildings



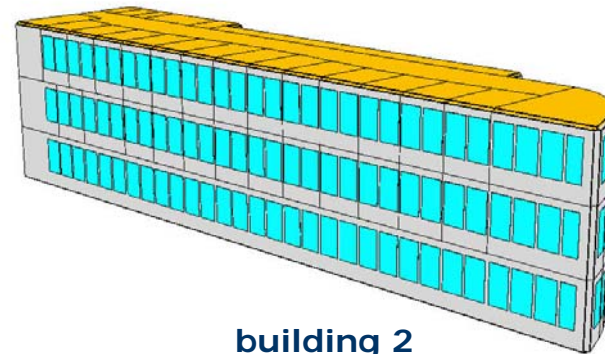
building 3



building 4



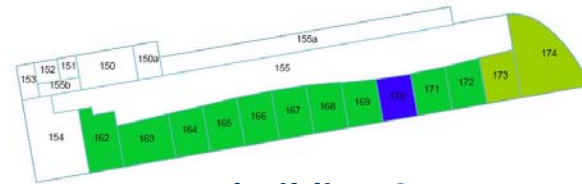
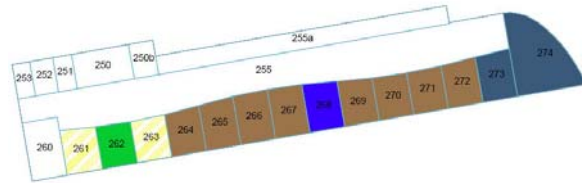
building 1



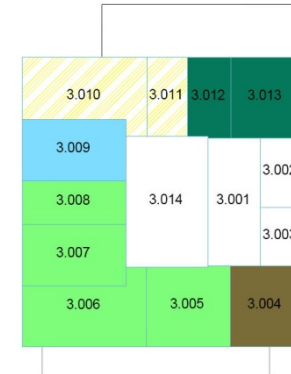
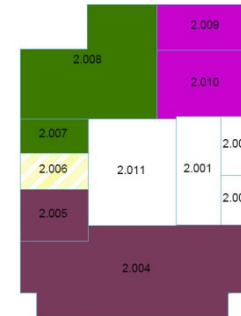
building 2

One of many scenarios

- OE\_Besprechung
- Vorbelegung: Freizeiten [Schraffur]
- OE\_SahliHaus
- OE\_ProCod
- OE\_Unternehmensentwicklung
- nicht belegt [Schraffur]
- OE\_MedCo
- OE\_MedAllMgmt
- OE\_Seelsorge
- OE\_Direktion L&F
- OE\_Tx-Medizin / Tx-Koordination
- OE\_FQM
- OE\_Rechtsdienst der Spitalleitung
- OE\_IR, IKS, RM
- OE\_Kunst
- OE\_FKM
- OE\_Ethik
- OE\_Fundraising



**building 2**



**building 4**



**building 1**



**building 3**

Optimization through ReCoTech achieves a 3% reduction of used space through consolidation.

From 50,000 m<sup>2</sup> the 1,500 m<sup>2</sup> saved translates into:

**rental savings** (at 11,- €/m<sup>2</sup>/month) of **198,000 €/year!**

**other savings** (at 3,00 €/m<sup>2</sup>/month) of **54.000,- €/year!**

**→ Total Savings of 252.000,- € / year!**

- The possibility of **simulating alternatives** – „what if?“  
Individually varying space needs,  
pre-reserved fixed allocation,  
buffer spaces.
- **Objective, rational, transparent** and honest planning.  
No playing favorites.

**The result of 5 years of R&D effort - ReCoTech**  
(Technology to relocate your Company)  
**a globally unique technology**

The IT-based processes

- use **existing data** (CAD, CAFM or Excel)!
- allow a **variety of assumptions** for the calculations!
- **deliver data for CAFM- and other tools** as required for realizing the space allocation!

## Requirements concerning the transfer business:

- We are looking for:
  - business partners
  - investors
  - buyers or licensees
- We want to achieve:
  - investment
  - commercialisation or licensing
- We need 250.000 € for 26 months

**Thank you for your  
interest!**