



Sustainability Milestones at Freie Universität Berlin The Role of Governance



Spring Campus 2018
Management Workshop
Freie Universität Berlin
2018, April 10/11

1. Introduction

- Chronology: milestones and governance steps

2. Two Milestones and their Governance

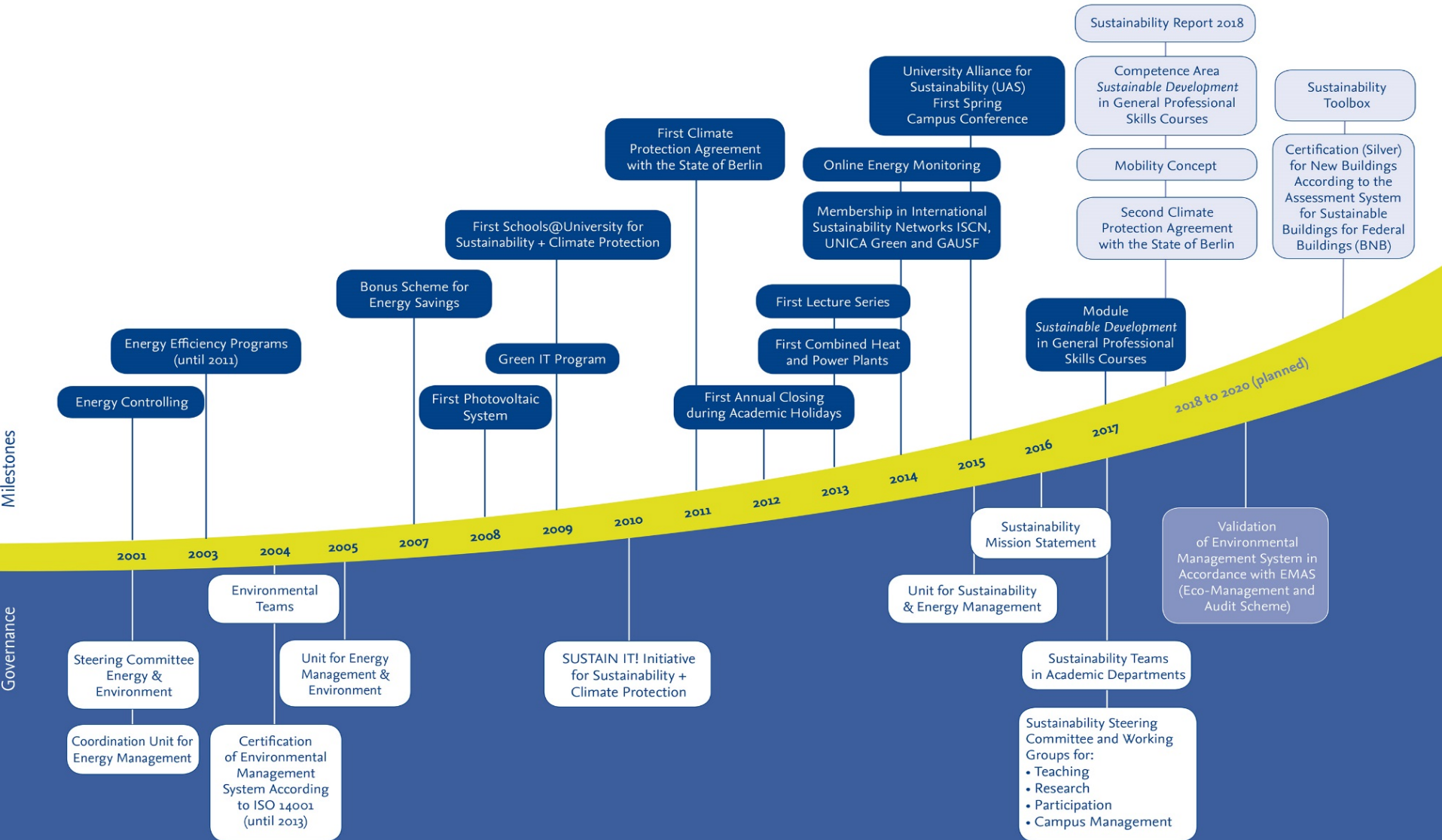
- Energy efficiency activities (2001-2011)
- Establishing new teaching formats (2016-today)

3. Discussing Governance Structures and Processes

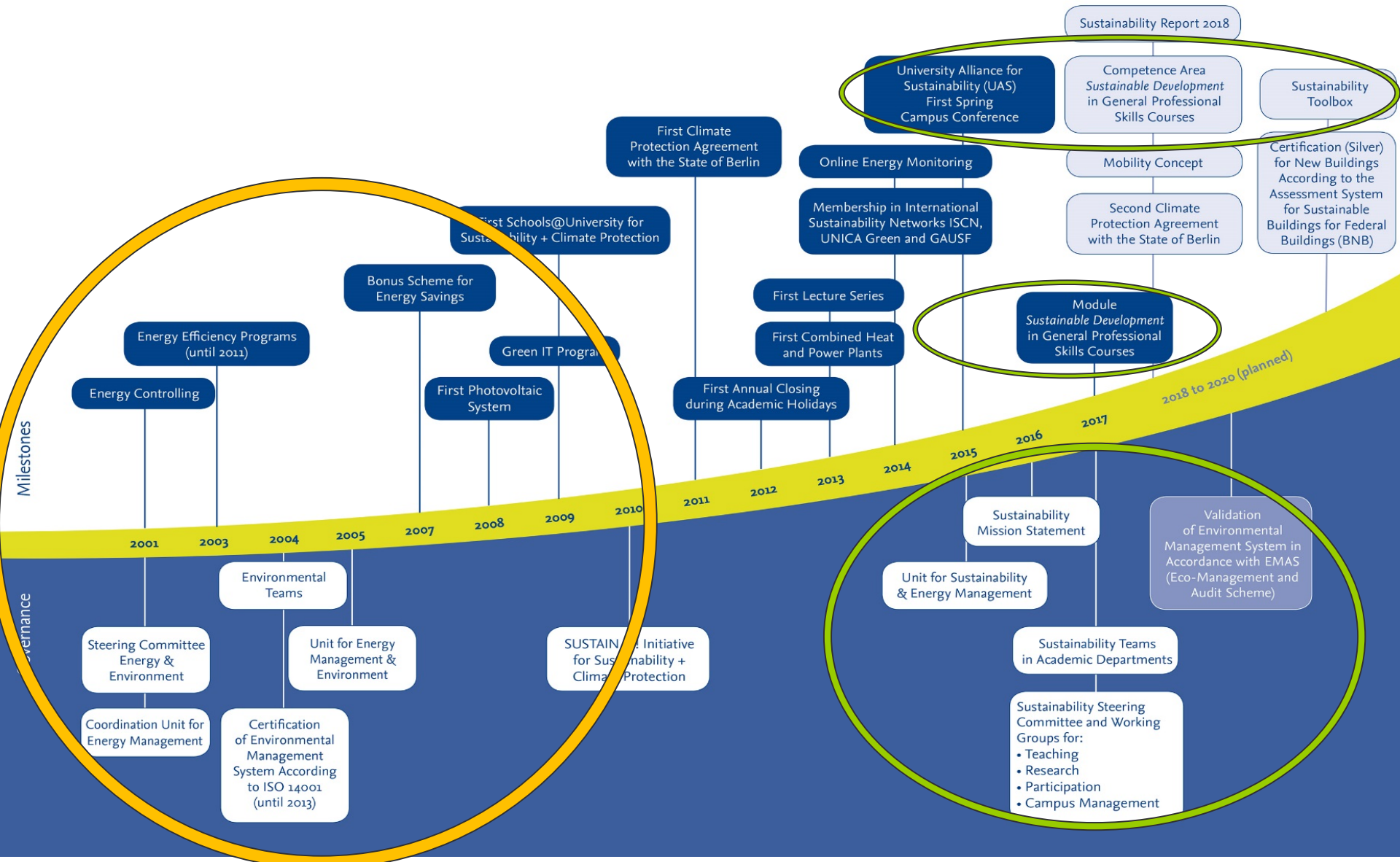
4. Lessons Learnt - The Impacts of Governance



From Energy to Sustainability Management



From Energy to Sustainability Management



-26%

Reduction in energy consumption
between 2001 and 2011

-99%

Reduction in heating oil
since 2001

-36%

Reduction in CO₂-emissions
(based on GEMIS / UBA)
since 2001
without increase
in floor space

-81%

Reduction in CO₂-emissions
(including CO₂-free electricity)
since 2001
without increase
in floor space

-35%

Reduction in heat consumption
since 2001
without increase
in floor space

4.2 million €

Avoided costs due to the reduction
of energy consumption
2017 compared to 2000/01
without increase in floor space

42.7 million €

Aggregate avoided costs due to the
reduction of energy consumption
since 2003
without increase in floor space

9

Photovoltaic systems
with a capacity of
657 kW_p

4

Combined heat and power plants
with a capacity of
715 kW_{el}

MILESTONES

- **ENERGY CONTROLLING (2001-today)**
 - Installing energy meters (2001/02)
 - Building up an energy data bank
- **ANNUAL ENERGY EFFICIENCY PROGRAMS FOR BUILDINGS (2003-2011)**
 - Based on building related optimization analyses by engineering offices, dedicated to energy efficiency
 - Focus on optimizing the operational technologies
 - 1.5 to 2.5 M € spent annually on profitable measures
- **BONUS SCHEME FOR ENERGY SAVING (2007-today)**
 - Giving financial incentives to faculties for saving energy
 - Facilitating communication with faculties
- **GREEN IT PROGRAM (2010-today)**
 - Defining several optimization measures in IT

Governance Structure (2001-2011)

- **Provost of finance and administration**
 - gave green light to an initial project
 - was committed to environmental sustainability in an ongoing and reliable manner
- **Sustainability unit located in the Division of Engineering and Utilities (DEU)**
 - growing from a single person unit to a 6-person one including waste management
 - DEU was in charge of the energy efficiency programs
 - head of the unit reported directly to the head of DEU and provost, based on EMS
- **Steering committee**
 - with provost, head of DEU, staff council and selected administration directors of faculties as members
 - served as a key role in first years by defining and legitimizing the strategy and key measures
- **Environmental management system (EMS) since 2004**
 - rolled-out step-by-step across entire university between 2004 and 2007, according to ISO 14001
 - combined with build-up cross-sectoral environmental teams

Governance Processes

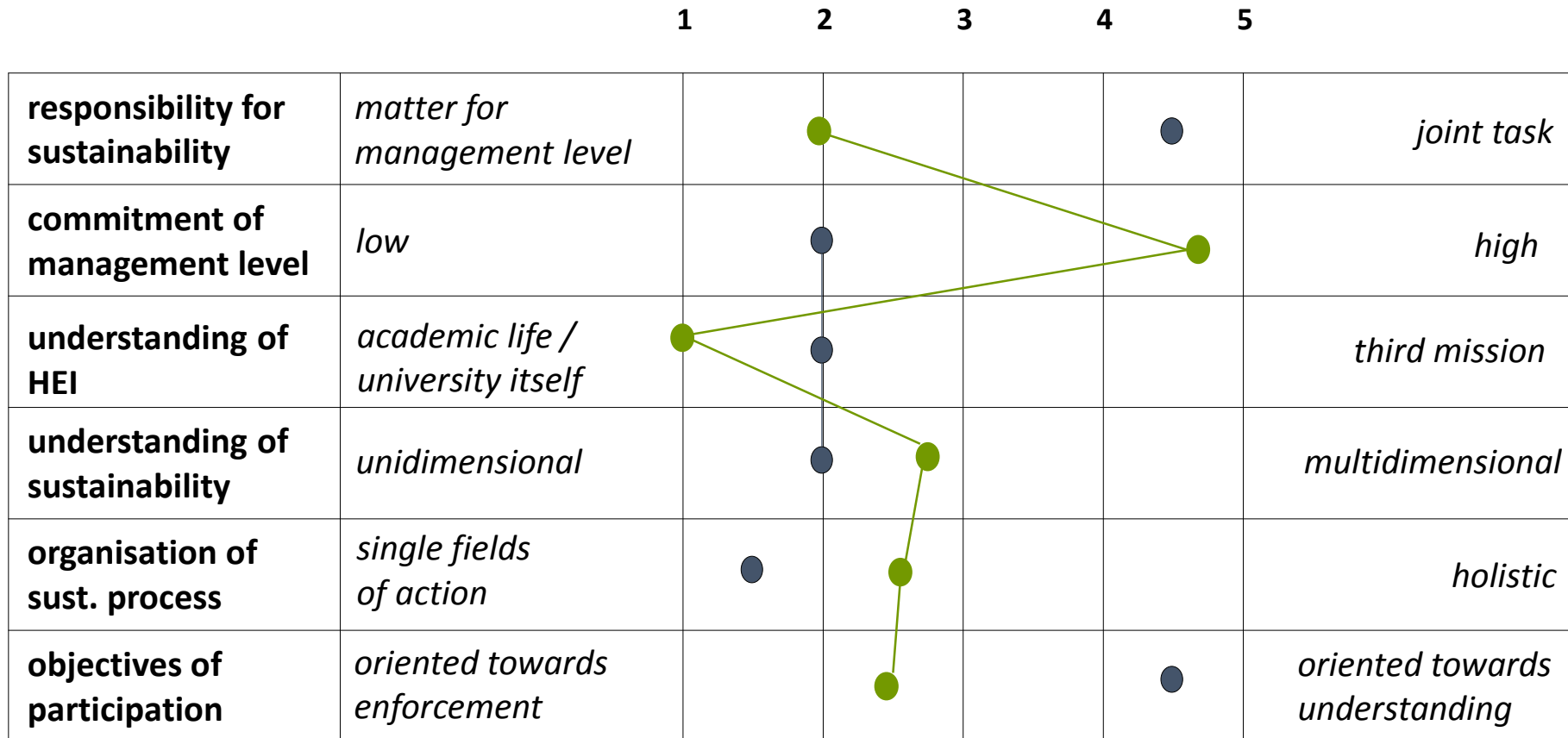
Mayor Impacts

- **Dynamic development in the first 5 years**
 - with a focus on the modernization of operational technologies
 - enhancing the role of the DEU, particularly operations
 - connecting faculties and DEU by the environmental teams
- **Active role of sustainability unit in designing and implementing the annual energy efficiency programs**
 - by making and controlling the contracts with external engineering and architectural offices
 - by participating in numerous construction meetings and partially facilitating them
 - by organizing fundraising
 - by communicating the programs with the faculties
- **Dominant role of economic efficiency in the context of sustainability**
- **Common perception of sustainability management as a technical and campus-related matter**
 - due to organizational integration within the Division of Engineering and Utilities

Specifics

- **Strong commitment of outgoing head of Division of Engineering and Utilities (DEU) (2001-2004)**
- **Dynamic generational change in DEU in the first years**
 - facilitated establishing energy efficiency as a common approach
- **Close cooperation with external engineering and architectural offices**
 - strongly committed to energy efficiency
 - engineering offices were not only designing but also directly involved in implementing the energy efficiency programs

Energy Efficiency Activities Governance Design



Teaching Activities

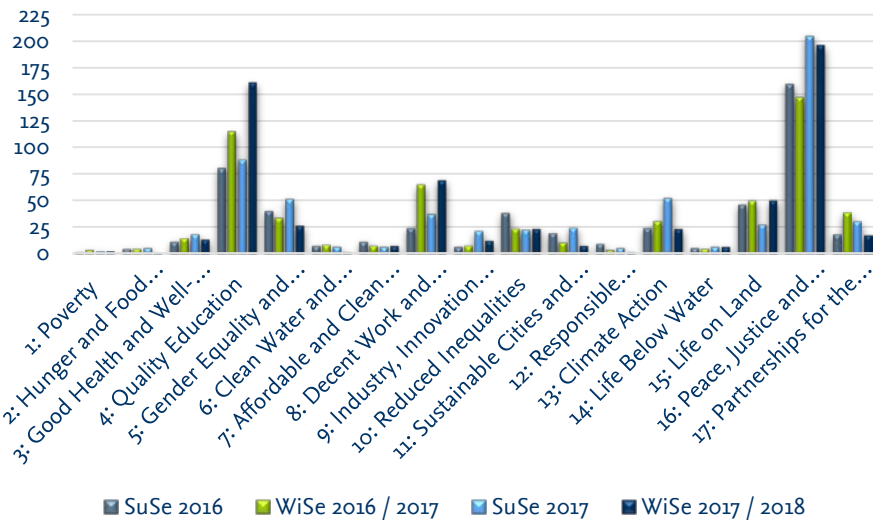
4,213 Courses in total*

153 with a focus on sustainability (4 %)

476 with a link to sustainability (11 %)

629 sustainability-related courses

[15%]



- PARTICIPATION POLICY: STEERING COMMITTEE WITH WORKING GROUP TEACHING/ESD (since 2016)

- ESTABLISHMENT OF AN AREA *SUSTAINABLE DEVELOPMENT* IN THE GENERAL PROFESSIONAL SKILLS COURSES (ABV) (starting Oct. 2018) WITH 4 MODULES

- MANAGING SUSTAINABILITY
- COMMUNICATING SUSTAINABILITY
- SHAPING SUSTAINABILITY
- RESEARCHING SUSTAINABILITY

- LECTURE SERIES AND SEMINARS

- SUSTAINABILITY TOOLBOX (2018/19)

- TEACHING INCUBATORS AS PART OF THE UNIVERSITY ALLIANCE FOR SUSTAINABILITY (since 2015)

*) Winter term 2017/18

**) 2017

Criteria according to the Sustainability Tracking Assessment & Rating Systems (STARS) as part of AASHE, Association for the Advancement of Sustainability in Higher Education

Area „Sustainable Development“ at a Glance

	Managing Sustainability	Communicating Sustainability	Shaping Sustainability	Researching Sustainability
Theoretical Part	Global societal challenges, dimensions of sustainable development, 17 SDGs, ESD, CSR, service learning, and sustainability management			
	<ul style="list-style-type: none"> sustainability management / sub-processes such as <ul style="list-style-type: none"> – mission statement development – goal-setting / planning 	<ul style="list-style-type: none"> communications tools related to sustainability 	<ul style="list-style-type: none"> service learning project management inter- and trans-disciplinary working methods 	<ul style="list-style-type: none"> Subject – depends on the research questions
Practical Part	Guided interdisciplinary teams to take on practical project tasks			
	<ul style="list-style-type: none"> administration critical thinking skills 	<ul style="list-style-type: none"> communications strategies based on the ESD teaching concept self-awareness to understand their own choices in communicating with others 	<ul style="list-style-type: none"> campus community partnerships 	<ul style="list-style-type: none"> complex problems and connections within the context of sustainable development create thoughtful measures for solutions

Governance Structure (2016-today)

- **Steering Committee**

- supported by four working groups covering the areas research, teaching/ESD, participation and campus management
- teaching working group includes professors, lecturers, members of Sustain it! and representatives of the Division of Academic Affairs, based on voluntary participation
- modules for Professional Skills Courses were framed by a 6-person voluntary sub-working group

- **Unit for Sustainability and Energy Management**

- located in Executive Board
- coordinates Steering Committee including working groups
- manages the area Sustainable development of the Professional Skills Courses including hiring lecturers, implementing pilot seminars and evaluating the courses

- **Division of Academic Affairs**

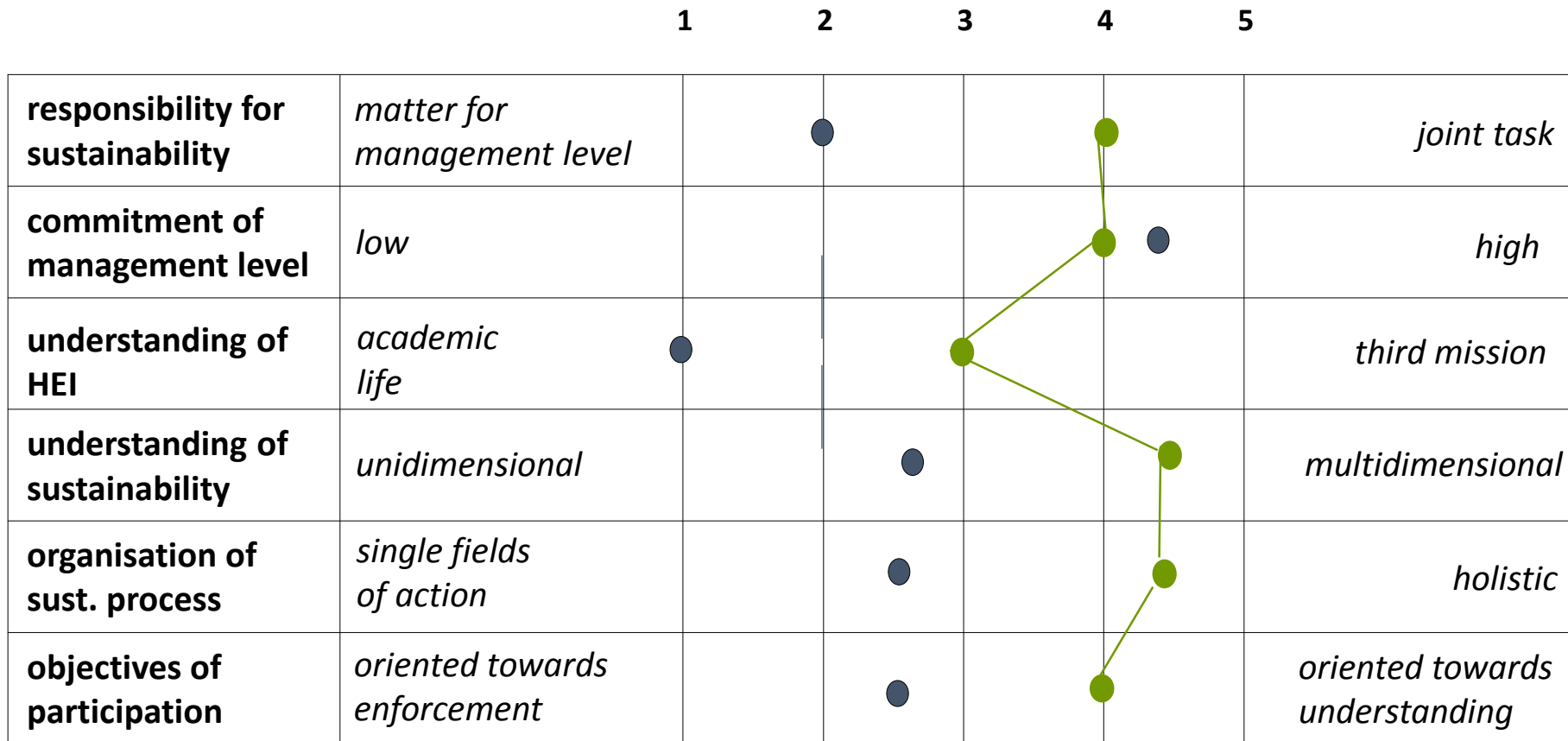
- participated in teaching working group and in sub-working group

Governance Processes

Major Impacts

- **Reliable support from Vice President, in charge of sustainability in research and teaching**
- **Active role of sustainability unit**
 - coordinating the Teaching Working Group and the draft modules
 - managing the administrative procedures in cooperation with the Division of Academic Affairs
- **Taking the University Alliance for Sustainability as catalyst**
 - by taking into account other pioneering universities and the need to maintain the project

Teaching Activities Governance Design



Conclusions

- **Governance profoundly matters**
- **“Making it easier for the stakeholders to join in” is one of the most important principles for embedding sustainability into the university, but this does require personnel resources**
- **Connecting with the DNA of the university is essential and goes beyond merely establishing appropriate governance structures and processes**

Thank you for your attention!



Contact:

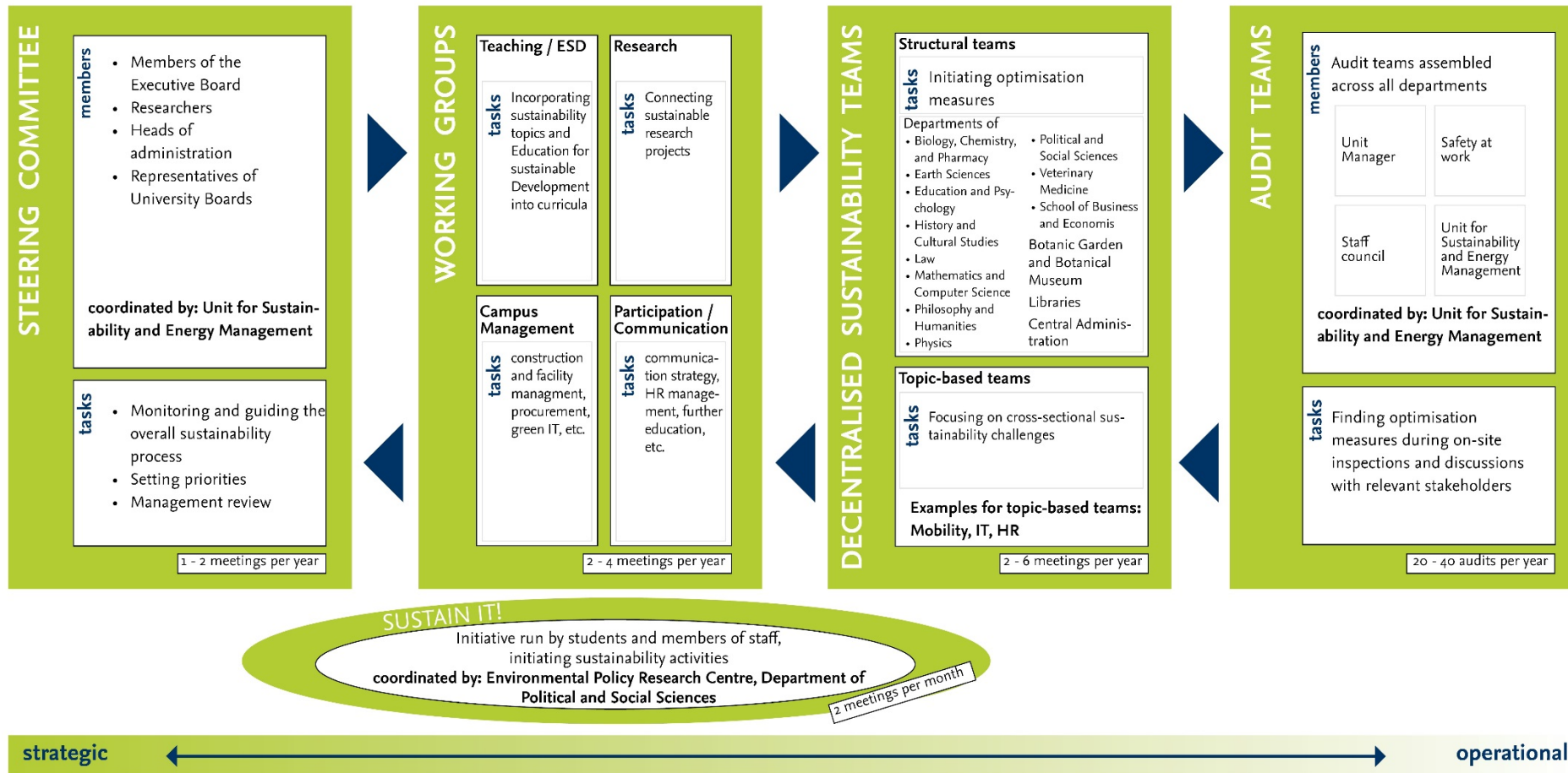
Andreas Wanke

Unit for Sustainability and
Energy Management

andreas.wanke@fu-berlin.de

www.fu-berlin.de/sustainability

Participatory Structures in Sustainability Management



Governance at Universities

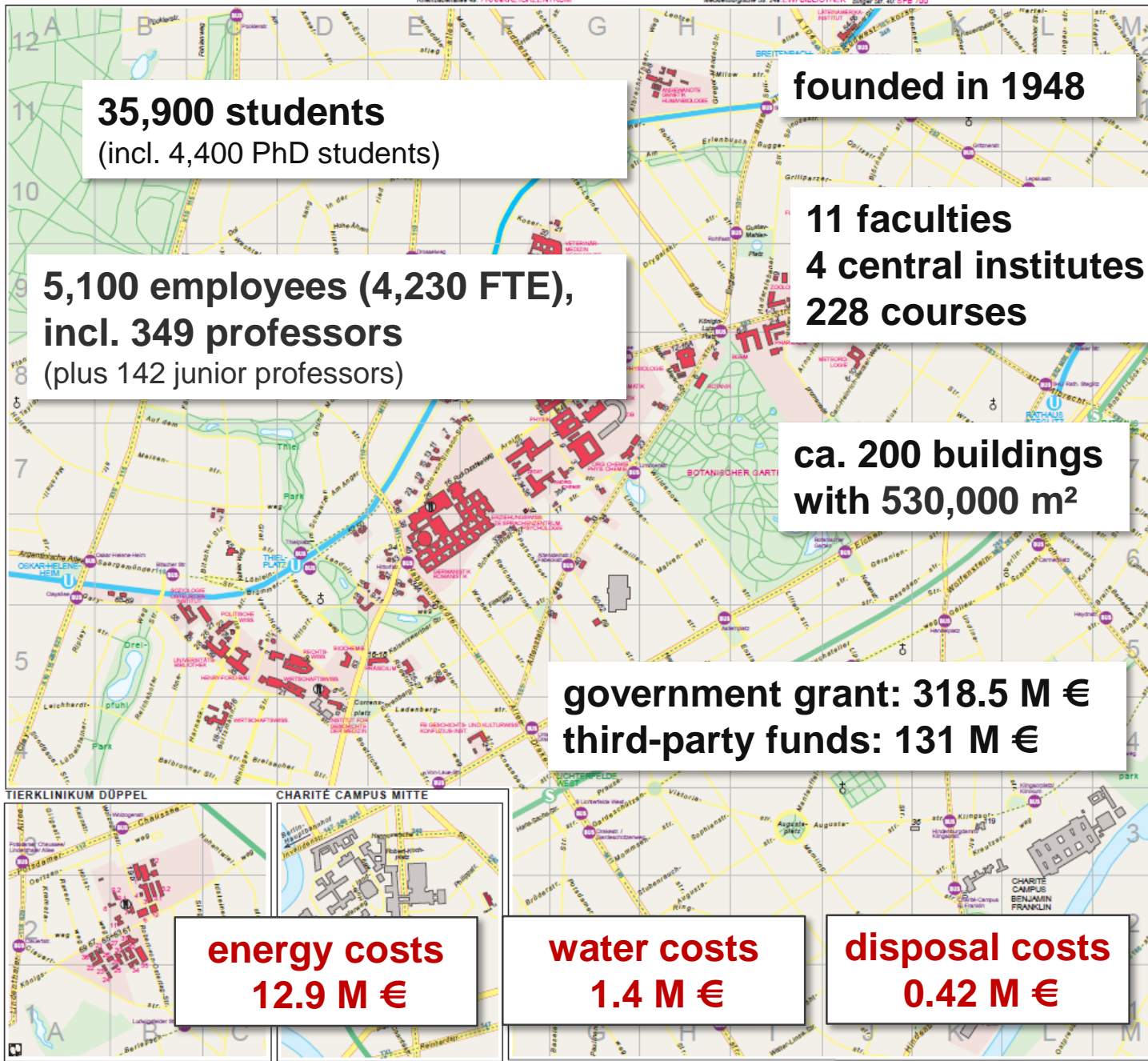
- Due to their complexity, solving global problems requires systematic interdisciplinary scientific collaboration and close transdisciplinary cooperation between researchers and civil societal stakeholders
- The various dimensions and goals of sustainability – environmental, social, economic, and cultural – need to be integrated across the entire university where possible. This puts a high demand on the designing of governance structures and processes.
- Because of universities' segmented structure, their plurality of leadership cultures and their hybrid self-conceptions, top-down approaches to sustainability management don't work satisfactorily. It should rather be understood as part of organizational development as well as of transformative and social learning processes. Therefore, defining reliable pathways that build alliances and participatory strategies are key for sustainability-related governance at universities.

Energy Efficiency Measures

Focus on operational technologies ...

- Hydraulic calibration of heating systems with precisely adjustable thermostat valves and line regulator valves implemented by engineering consultancies
- Optimization of heating and ventilation control systems
- Installation of electrically controlled heating pumps
- Limited thermostatic valves in seminar rooms, halls, and corridors
- Closure of central hot water supplies
- Modernization of boilers (particularly old heating oil boilers)
- Changing from heating oil to natural gas and district heating
- Installation of power buttons in order to switch on ventilation for a limited time
- Replacement and optimization of cooling systems

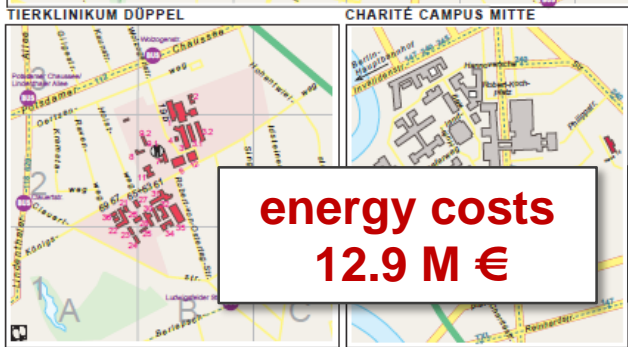
... combined with building envelope measures



HOCHSCHULSTANDORTE IN
- DAHLEM UND STEGLITZ
- DÜPPEL
- LANKWITZ
- MITTE

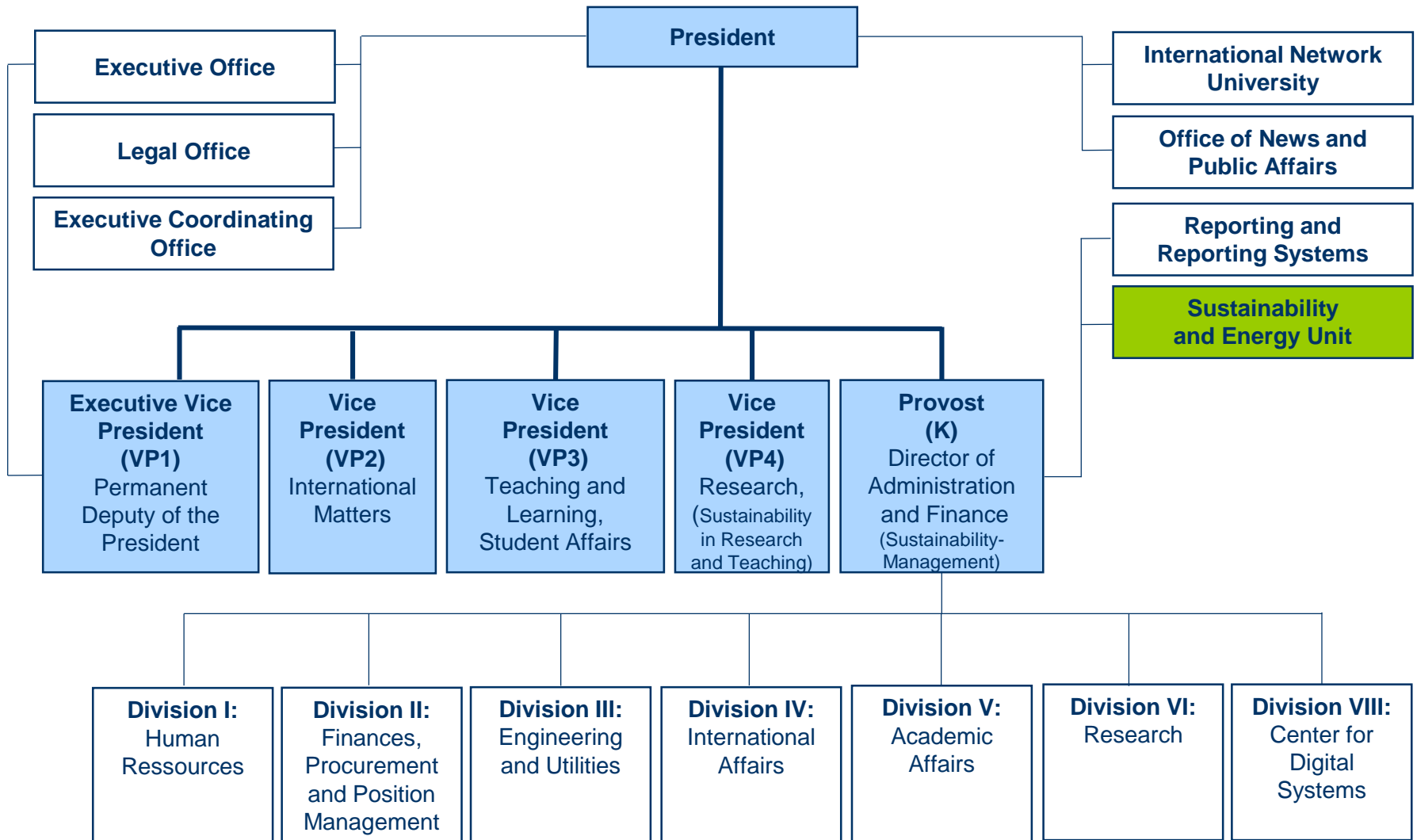
Stand 18.08.2014

-  Gebäude der FU mit Grundstücksfläche und Hausnummer
- GEOGRAPHIE**
-  Mensa
-  Gebäude mit teilw. FU-Nutzung
-  Übrige bebaute Fläche
-  Grünfläche
-  Gewässerfläche
- Thiallee:**  Wichtige Hauptstraße
- Schloßstr.:**  Hauptstraße
- Geystr.:**  Nebenstraße
-  Buslinie mit Haltestelle
-  S-Bahn Linie mit Bahnhof
-  U-Bahn Linie mit Bahnhof
-  Bushaltestelle



Datas: students: 2016, employees: end of 2016, energy costs: 2016, water costs: 2015, disposal costs: 2016

Structure of the University Management



Key Tasks of the Sustainability Unit

- Coordinating the sustainability steering committee and the decentralized sustainability teams
- Connecting sustainability activities in teaching, research, outreach, and campus management and promoting their visibility
- Integrating sustainability aspects into facility management, procurement processes as well as into IT management
- Energy controlling and energy online monitoring
- Establishing new sustainability-related teaching formats
- Coordinating the University Alliance for Sustainability and enhancing international networking
- Steering certification process (according to EMAS and based on an integrated management system)
- Waste management including waste database and operational disposal of hazardous waste

Governance at Universities

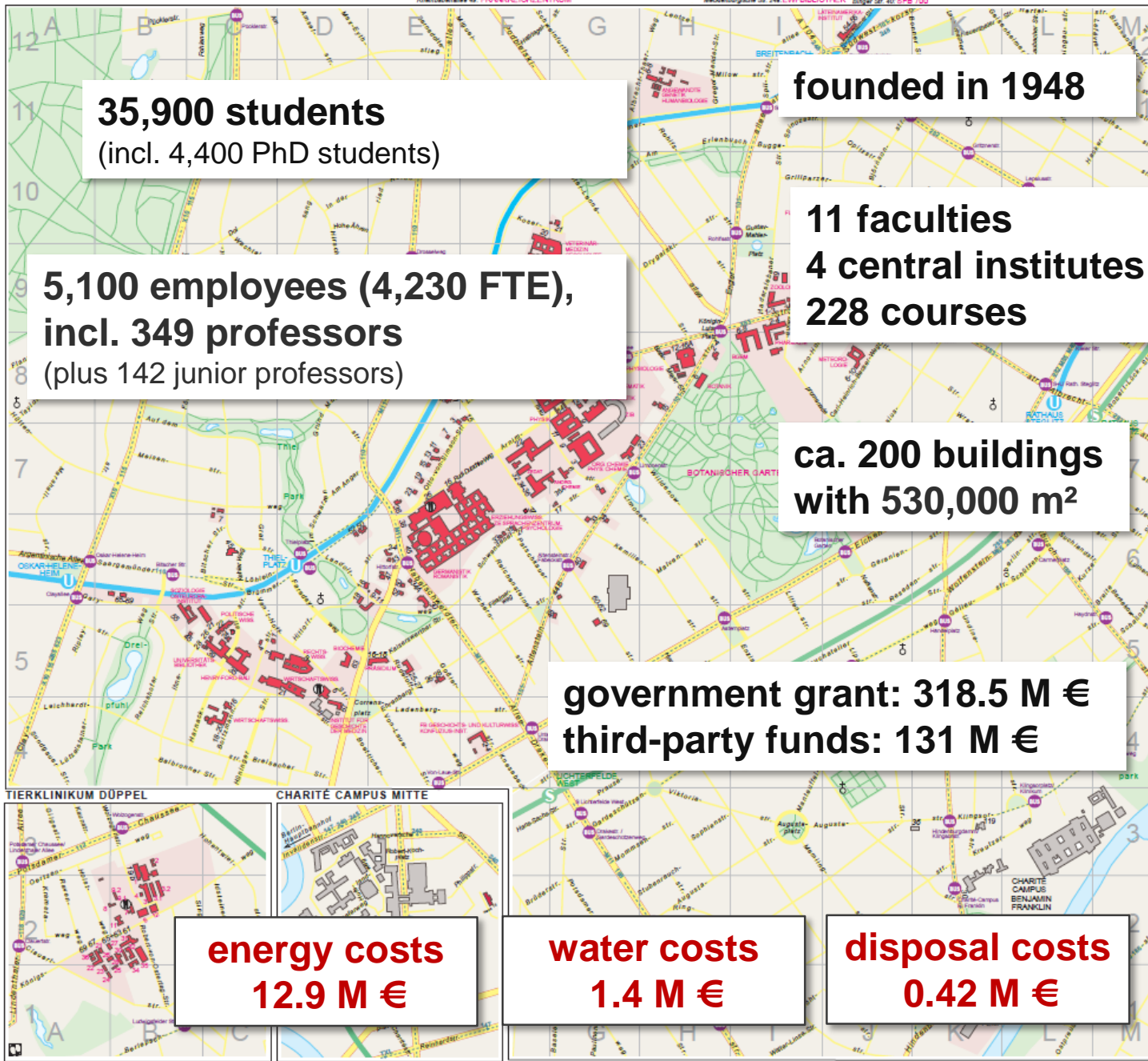
- Due to their complexity, solving global problems requires systematic interdisciplinary scientific collaboration and close transdisciplinary cooperation between researchers and civil societal stakeholders
- The various dimensions and goals of sustainability – environmental, social, economic, and cultural – need to be integrated across the entire university where possible. This sets high demands on the designing of governance structures and processes.
- Because of the segmented structure of universities, their plurality of leadership cultures and their hybrid self-conceptions, sustainability management doesn't work satisfactorily with a top-down-approach. It should rather be comprehended as a part of organizational development as well as of transformative and social learning processes. Therefore, defining reliable pathways which building alliances and participatory strategies play a key role for sustainability related governance at universities.

Energy Efficiency Measures

Focus on operational technologies ...













- Hydraulic calibration of heating systems with precisely adjustable thermostat valves and line regulator valves, implemented by engineering consultancies
- Optimization of heating and ventilation control systems
- Installation of electrically controlled heating pumps
- Limited thermostatic valves in seminar rooms, halls and corridors
- Closure of central hot water supplies
- Modernisation of boilers (particularly old heating oil boilers)
- Changeover from heating oil to natural gas and district heating
- Installation of power buttons in order to switch on ventilation for a limited time
- Replacement and optimization of cooling systems

... combined with building envelope measures



HOCHSCHULSTANDORTE IN
- DAHLEM UND STEGLITZ
- DÜPPEL
- LANKWITZ
- MITTE

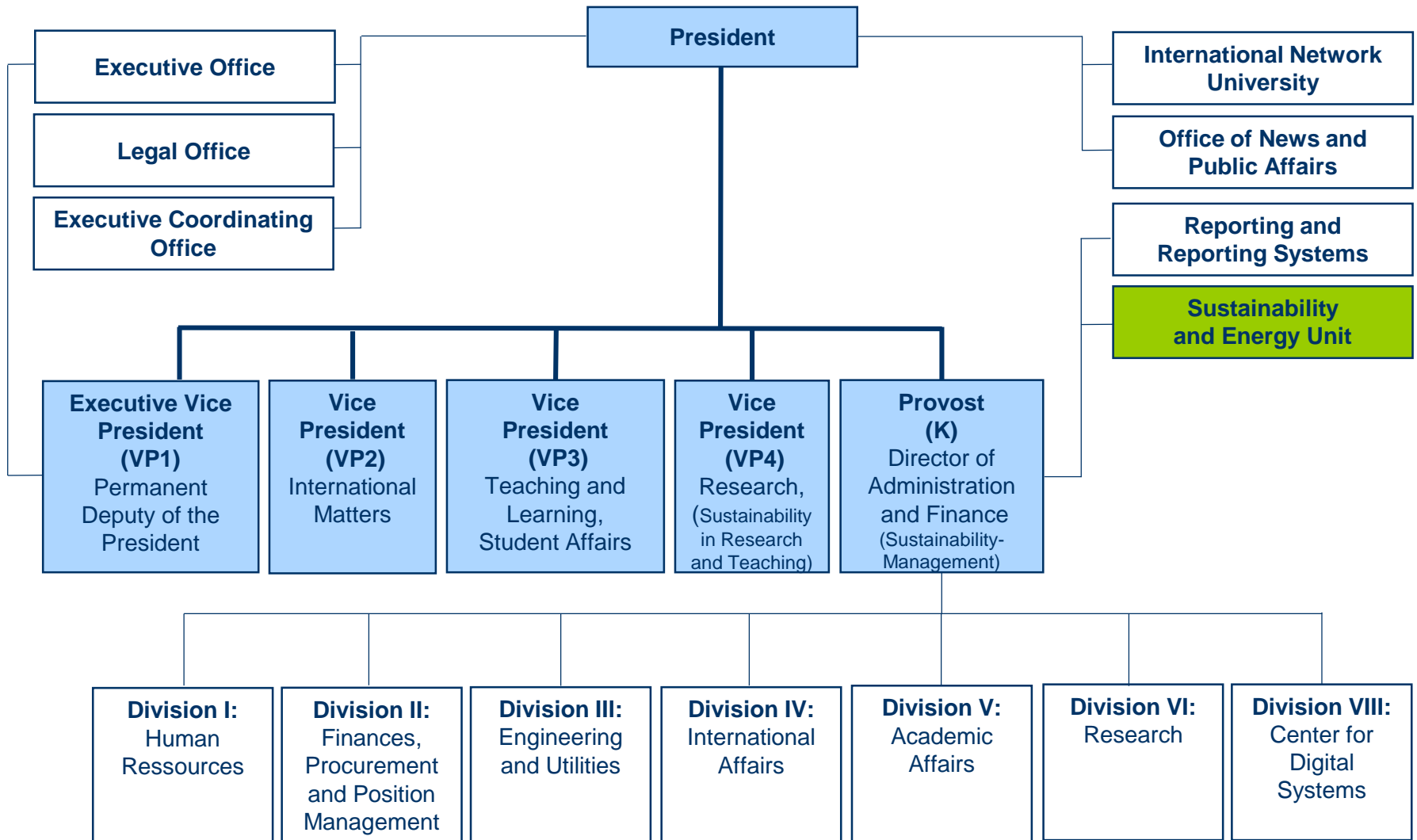
Stand 18.08.2014

-  Gebäude der FU mit Grundstücksfläche und Hausnummer
- GEOGRAPHIE**
-  Mensa
-  Gebäude mit teilw. FU-Nutzung
-  Übrige bebaute Fläche
-  Grünfläche
-  Gewässerfläche
- Thiallee:**  Wichtige Hauptstraße
- Schloßstr.:**  Hauptstraße
- Geystr.:**  Nebenstraße
-  Buslinie mit Haltestelle
-  S-Bahn Linie mit Bahnhof
-  U-Bahn Linie mit Bahnhof
-  Bushaltestelle



Datas: students: 2016, employees: end of 2016, energy costs: 2016, water costs: 2015, disposal costs: 2016

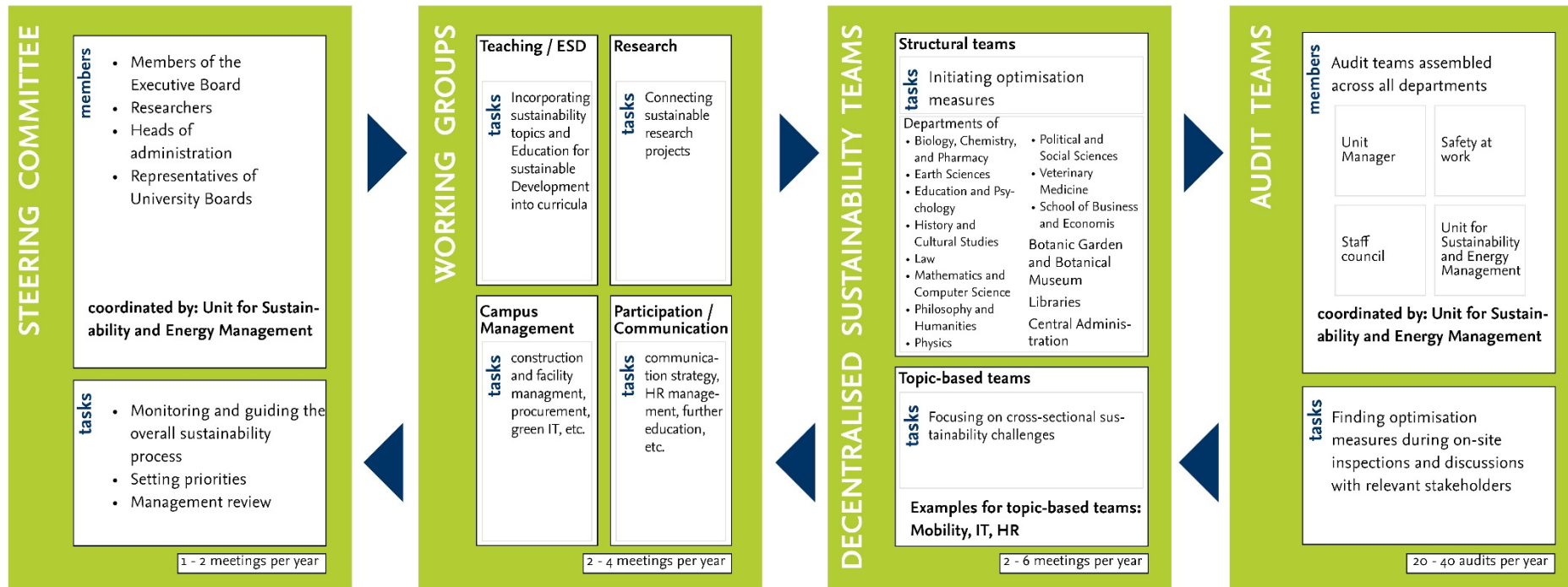
Structure of the University Management



Key Tasks of the Sustainability Unit

- Coordinating the sustainability steering committee and the decentral sustainability teams
- Connecting sustainability activities in teaching, research, outreach, and campus management and promoting their visibility
- Integrating sustainability aspects into facility management, procurement processes as well as into IT management
- Energy controlling and energy online monitoring
- Establishing new sustainability related teaching formats
- Coordinating the University Alliance for Sustainability and enhancing international networking
- Steering certification process (according to EMAS and based on an integrated management system)
- Waste management including waste database and operational disposal of hazardous waste

Participatory Structures in Sustainability Management

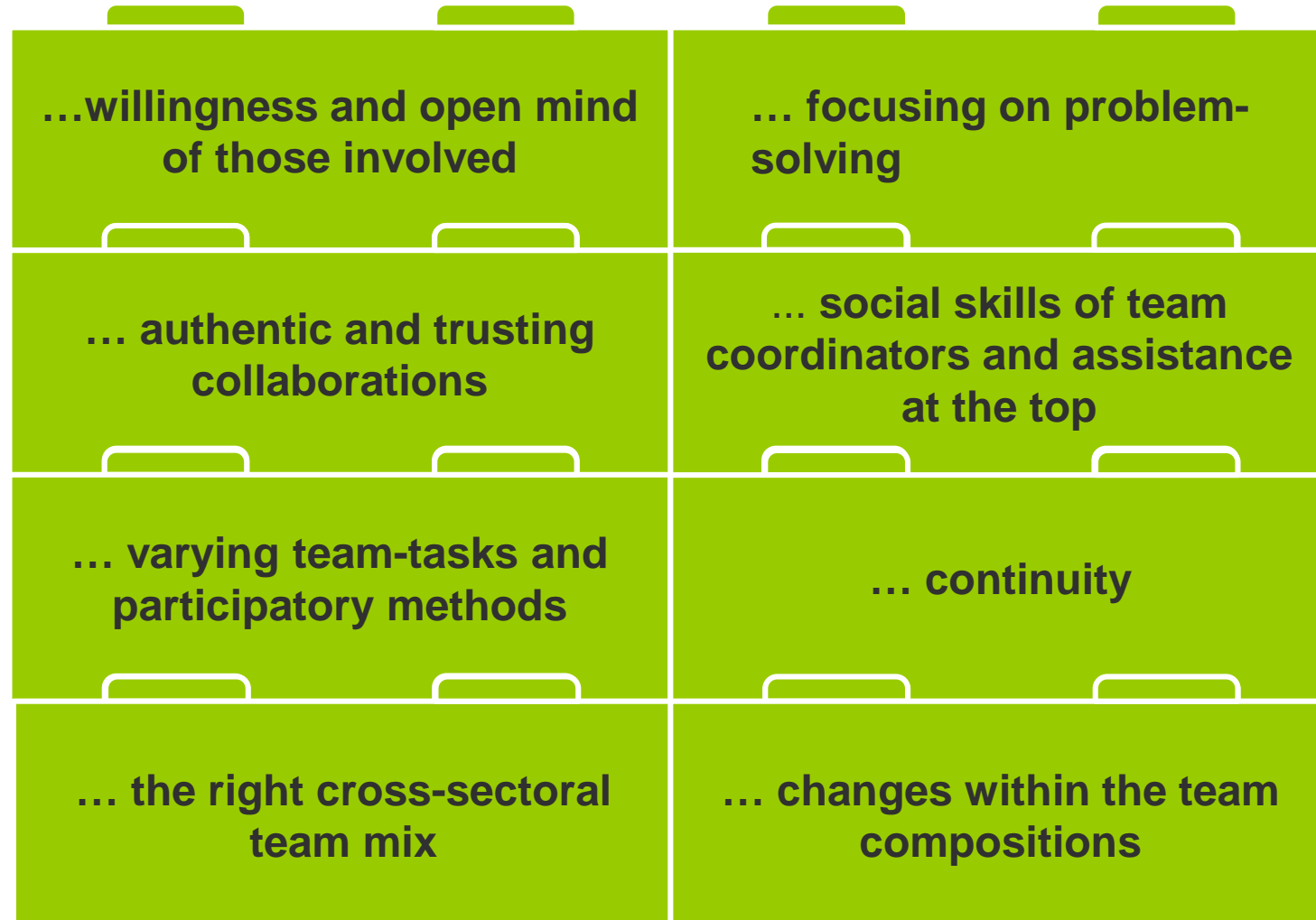


strategic



operational

Lessons Learned: Effective Participation requires...



Governance Processes

Unintended effects

- **No full integration of sustainability aspects in DEU**
- due to its segmented governance structure and practice
- **Dominant role of economic efficiency in the context of sustainability**