



Federal Ministry
of Education
and Research



Visit of Vietnamese AKIZ Delegation in Germany 25.09.2011 – 30.09.2011



Institute of Environmental Engineering
and Management at the
University of Witten/Herdecke gGmbH

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1. PARTICIPANTS

1. Prof. Do Quang Trung (HUS)
2. Mr Phan Duy Nga (HUS)
3. Prof. Nguyen Van Phuc (TP1)
4. Prof. Le Thanh Son (TP2)
5. Mr Pham Huy Dong (TP5)
6. Ms Nhâm Thị Phương Lan (TP6)
7. Dr. Nguyen Thi Thanh Phuong (TP6)

8. Mr. Winfried Suwarnarat (IEEM invited)

9. Nguyen Van Long (IEEM)
10. René Heinrich (IEEM)
11. Sandra Kreuter (IEEM)

2. PROGRAMME

	Saturday 24.09.	Sunday 25.09.	Monday 26.09.	Tuesday 27.09.	Wednesday 28.09.	Thursday 29.09.	Friday 30.09.	Saturday 01.10.
07:00		6:30h Arrival at Frankfurt Airport						Arrival VN
08:00		Welcome in Frankfurt by IEEM and pick-up by minibus	8:30 - 10:30h IEEM - Univ. of Witten/Herdecke	8:00-9:00h [transfer Leipzig - Bitterfeld]		8:30-10:00h Passavant Roediger Hanau		
09:00				9:00-11:00h Industrial Zone Bitterfeld-Wolfen - WWTP	9:00 - 11:00 LAR			
10:00			10:00 - 14:00h [transfer Frankfurt-Witten]	10:30 - 12:00h [transfer Witten-Meschede]			10:00-11:00h [transfer Hanau-Darmstadt/Rossdorf]	
11:00				11:00-13:00h [transfer Bitterfeld - Berlin]	11:00-13:30h [transfer Berlin-Braunschweig]	11:00 - 13:00h Envirochemie Rossdorf	11:00 - 11:40h [transfer Frankfurt - Frankfurt Airport]	
12:00				12:00 - 13:00h Lunch in Meschede			11:40h Arrival FRA Airport	
13:00				13:00 - 14:30h - HST Meschede		13:00-13:30h [transfer Rossdorf-Darmstadt]		
14:00					13:00h Check-In Hotel Berlin	13:30-15:00h ISWW TU Braunschweig	13:30 - 15:30h WWTP Darmstadt + IWAR Darmstadt	14:40h Departure FRA Airport
15:00		Check-In Hotel Witten	14:30 - 18:30h [transfer Meschede - Leipzig]	Visit of Berlin City Centre				
16:00					15:00 -18:30h [transfer Braunschweig - Hanau]	15:30 -16:30h [transfer Darmstadt - Frankfurt]		
17:00						Visit of Frankfurt City Centre		
18:00			18:30h Check-In Hotel Leipzig		18:30h Check-In Hotel Area Hanau/Frankfurt			
19:00	23:30h Departure VN	Welcome dinner in Witten	dinner	dinner	dinner	dinner		

Accomodation	Witten	Leipzig	Berlin	Frankfurt	Frankfurt
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Activities:

- (1) **TP 1 + 5 - Institute of Environmental Engineering and Management at the University of Witten/Herdecke gGmbH**
- AKIZ workshop and discussion about
 - status of AKIZ project
 - tasks to be done in AKIZ project
 - Presentation and walk through University of Witten/Herdecke
 - Snack at main hall of University of Witten/Herdecke
- (2) **TP 2 - HST Hydro-Systemtechnik GmbH**
- Presentation of HST and office buildings
 - Introduction of modern controlling technology of wastewater treatment plants
 - Workshop and discussion on modern controlling technology of wastewater treatment plants
 - > Technology used in Germany, Europe and possibilities of transfer to Vietnam and other countries
 - > Which parts of technology can be substituted by Vietnamese materials, which not?
 - > Which parts of technology have to or may be adapted to local conditions?
 - > What are the challenges when transferring wastewater treatment plant controlling technology to Vietnam?
 - workshop and discussion concerning status of TP 2 and tasks to be done
- (3) **Industrial Zone of Bitterfeld-Wolfen - WWTP**
- Visit of WWTP of Bitterfeld-Wolfen which is treating the wastewater from the Industrial Zone of Bitterfeld-Wolfen
 - Workshop and discussion of industrial wastewater treatment technology
 - > Technology used in Germany, Europe and possibilities of transfer to Vietnam and other countries
 - > Which parts of technology can be substituted by Vietnamese materials, which not?
 - > Which parts of technology have to or may be adapted to local conditions?
 - > What are the challenges when transferring industrial wastewater treatment technology to Vietnam?
 - Snack
- (4) **TP 5 - LAR Process Analysers AG**
- Presentation of LAR
 - Presentation and visit of LAR laboratory and production site
 - Demonstration of modern analyser technology
 - Workshop and discussion on measurement equipment for wastewater analysis
 - > Wastewater analysis according to German/European and VN standard - what are the differences?
 - > Measurement equipment for wastewater parameters used in Germany/Europe and in Vietnam/Asia - differences and experiences by LAR
 - > How German/European measurement technology has to be adapted to local conditions? What are the challenges?
 - > What are the possibilities of substitution of Germany high tech materials by local Vietnamese materials?
 - workshop and discussion concerning status of TP 5 and tasks to be done
- (5) **TP 6 - ISWW Braunschweig - Institute of Sanitary and Environmental Engineering, Technical University of Braunschweig**
- Presentation of ISAH Hannover
 - Presentation and visit of laboratory and pilot plants of ISWW Braunschweig
 - Workshop and discussion on sewage sludge concepts Germany vs. Vietnam
 - > Sewage sludge treatment and disposal technologies/state of the art in Germany and Europe
 - > Sewage sludge qualities and quantities in Germany and Europe
 - > Sewage sludge in Vietnam - what can be expected (quantities and qualities)?
 - > Which sewage sludge treatment technologies may be appropriate for Vietnam?
 - > How German/European technology would have to be adapted to local conditions?
 - workshop and discussion concerning status of TP 6 and tasks to be done
 - Snack

(6)

TP 3 + 6 - Passavant-Roediger GmbH

- Welcome of VN delegation
- Presentation of Passavant Roediger
- Presentation and visit of Passavant Roediger production site
- Workshop and discussion on wastewater treatment technology Germany vs. Vietnam
 - > wastewater treatment technologies/state of the art in Germany and Europe
 - > Which wastewater treatment concepts and technologies are appropriate for Vietnam?
 - > How German/European wastewater treatment technology has to be adapted to local conditions?
 - > Experiences of usage of German/European technology in Asian countries/Vietnam?
 - > What are the possibilities of substitution of Germany high tech materials by local Vietnamese materials?
- workshop and discussion concerning status of TP 3 and 6 and tasks to be done

(7)

TP 4 - IWAR TU Darmstadt - Institute of Water Supply and Groundwater Protection, Wastewater Technology, Waste Management, Industrial Material Cycles, Environment and Spatial Planning, Darmstadt Technical University

- Presentation of IWAR Darmstadt
- Presentation of projects and visit of laboratory and pilot plants of IWAR Darmstadt at WWTP of Darmstadt
- Workshop and discussion on membrane technology for recovery of valuables from wastewater
 - > Technology used in Germany, Europe and possibilities of transfer to Vietnam and other countries
 - > Which parts of membrane technology can be substituted by Vietnamese materials, which not?
 - > Which parts of membrane technology have to or may be adapted to local conditions?
 - > What are the challenges when transferring membrane technology to Vietnam?
- workshop and discussion concerning status of TP 4 and tasks to be done
- snack

(8)

TP 4 - EnviroChemie GmbH

- Presentation of Envirochemie
- Presentation and visit of pilot plants and production site of Envirochemie
- Workshop and discussion on membrane technology for recovery of valuables from wastewater
 - > Technology used in Germany, Europe and possibilities of transfer to Vietnam and other countries
 - > Which parts of membrane technology can be substituted by Vietnamese materials, which not?
 - > Which parts of membrane technology have to or may be adapted to local conditions?
 - > What are the challenges when transferring membrane technology to Vietnam?
- workshop and discussion concerning status of TP 4 and tasks to be done

3. ITINERARY



BERLIN
STUTTGART

- Staatsgrenze der Bundesrepublik
- Staatsgrenze im Ausland
- Landesgrenze
- Bundeshauptstadt
- Hauptstadt anderer Staaten
- Landeshauptstadt
- KÖLN
- BREMEN
- DRESDEN
- WÜRZBURG
- KONSTANZ
- Neu-Isenburg
- Warnemünde
- Stadt über 1 Mio. Einwohner
- Stadt über 500.000 Einwohner
- Stadt über 250.000 Einwohner
- Stadt über 100.000 Einwohner
- Stadt über 50.000 Einwohner
- Stadt über 20.000 Einwohner
- Stadt, Ort unter 20.000 Einwohner

DÄNEMARK
Thüringen
Hunsrück
Pfalz
OSTFRIESISCHE INSELN
Nordsee

Nachbarstaat
Bundesland
Gebirgszug
Landschaft
Inselgruppe
Insel

Autobahn, Schnellstraße
Autobahntunnel, Autobahn im Bau
Sonstige Fernstraßen
Mehrgleisige Eisenbahn, Einzelgleisige Eisenbahn
Fährverbindung

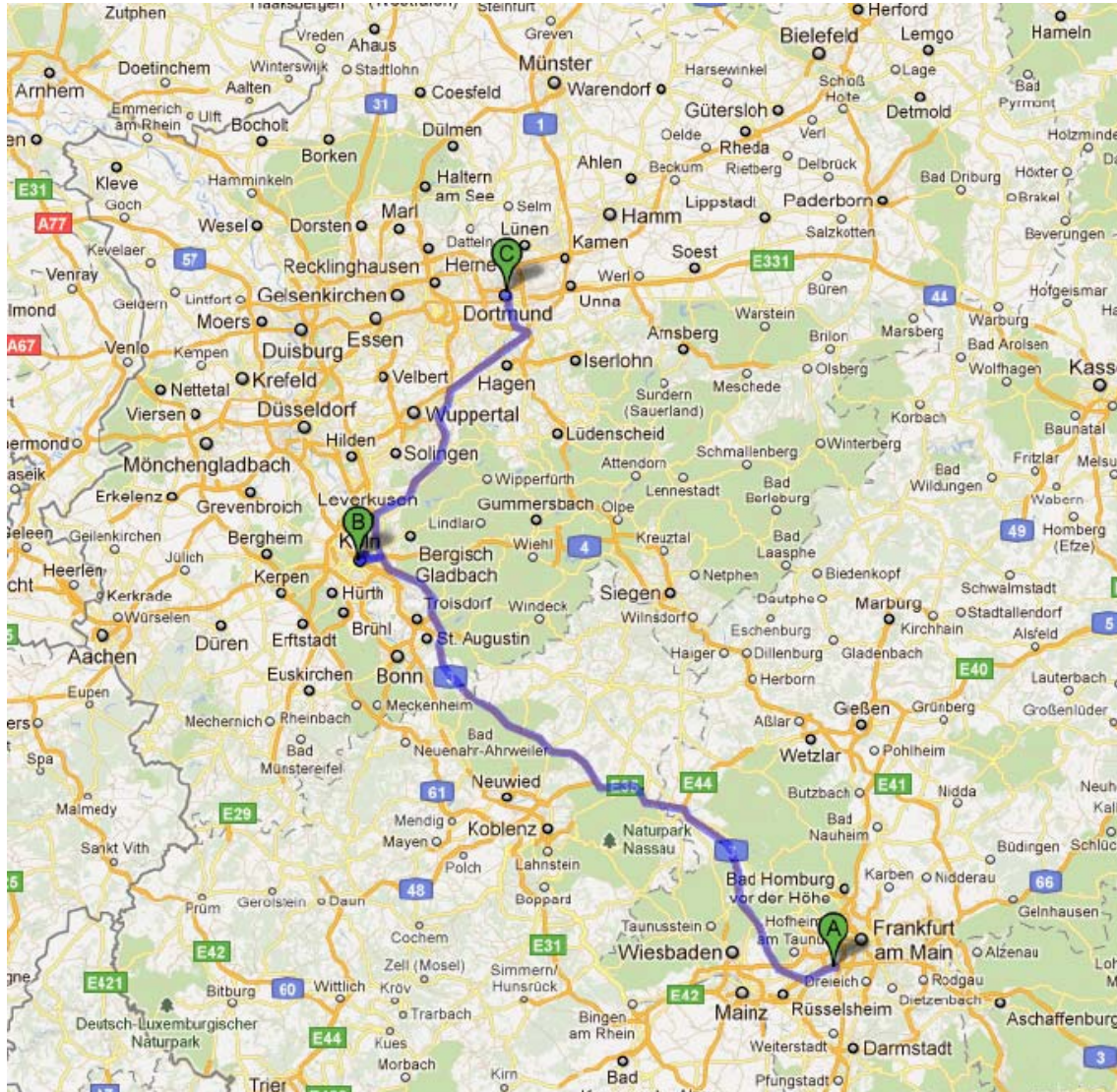
See
Fluss
Wichtiger Berg mit Höhenpunkt
Geschlossene Besiedlung
Internationaler Flughafen

0km 20km 40km 60km 80km 100km
Lamberts winkeltreue Kegelabbildung
mit zwei längsten Bezugsbreitenkreisen 48°40' und 52°40'
Ellipsoid: Geodätisches Referenzsystem 1980 (GRS 80)
© Bundesamt für Kartographie und Geodäsie, Frankfurt am Main (2009)
Vervielfältigung, Verbreitung und öffentliche Zugänglichmachung, auch auszugsweise, mit Quellenangabe gestattet.

Sunday, 25 September 2011

(1) [Frankfurt Airport – Cologne – Dortmund]

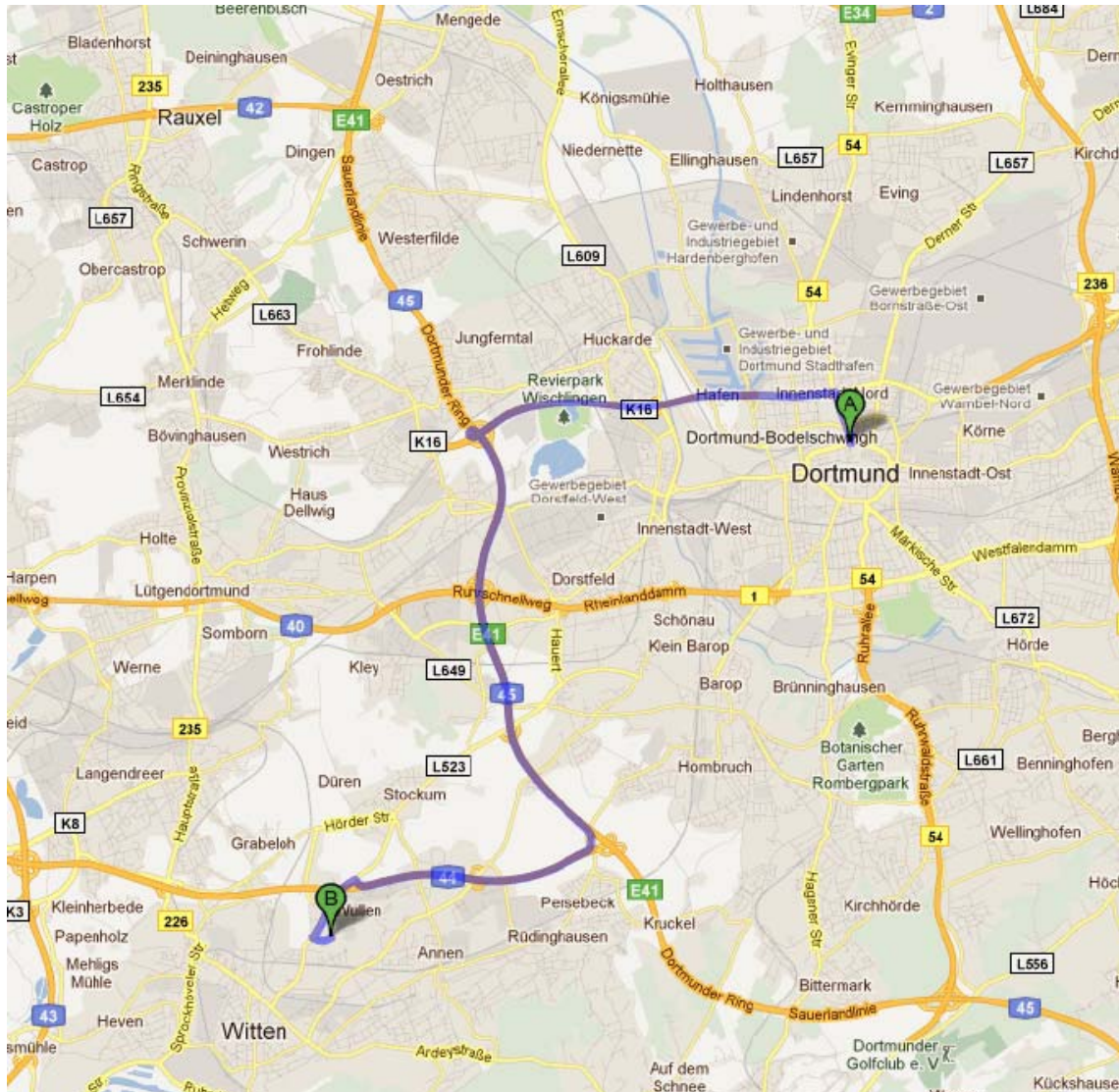
Distance: 279 km



Monday, 26 September 2011

(1) [Dortmund - Witten]

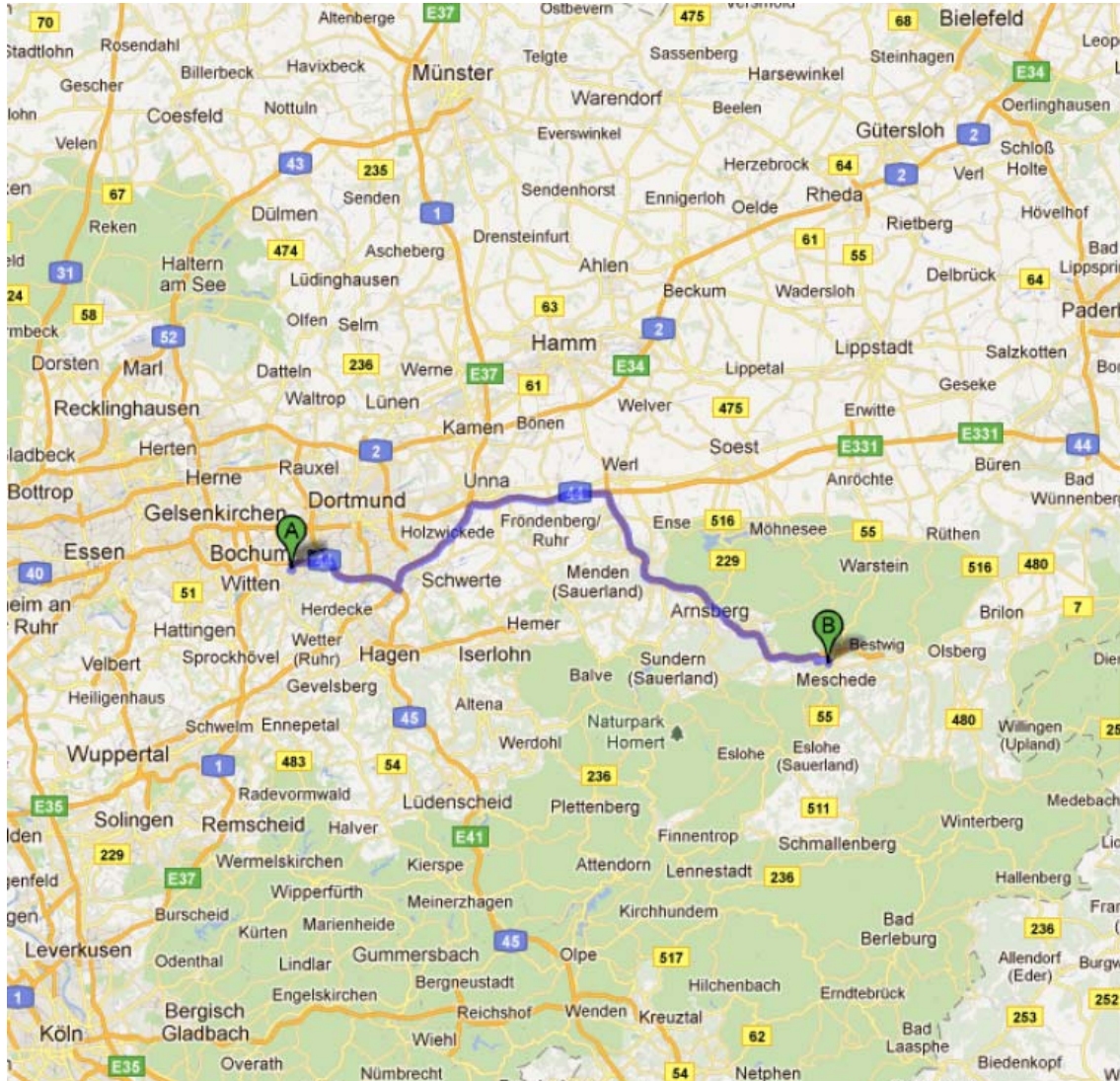
Distance: 19 km



Monday, 26 September 2011

(2) [Witten - Meschede]

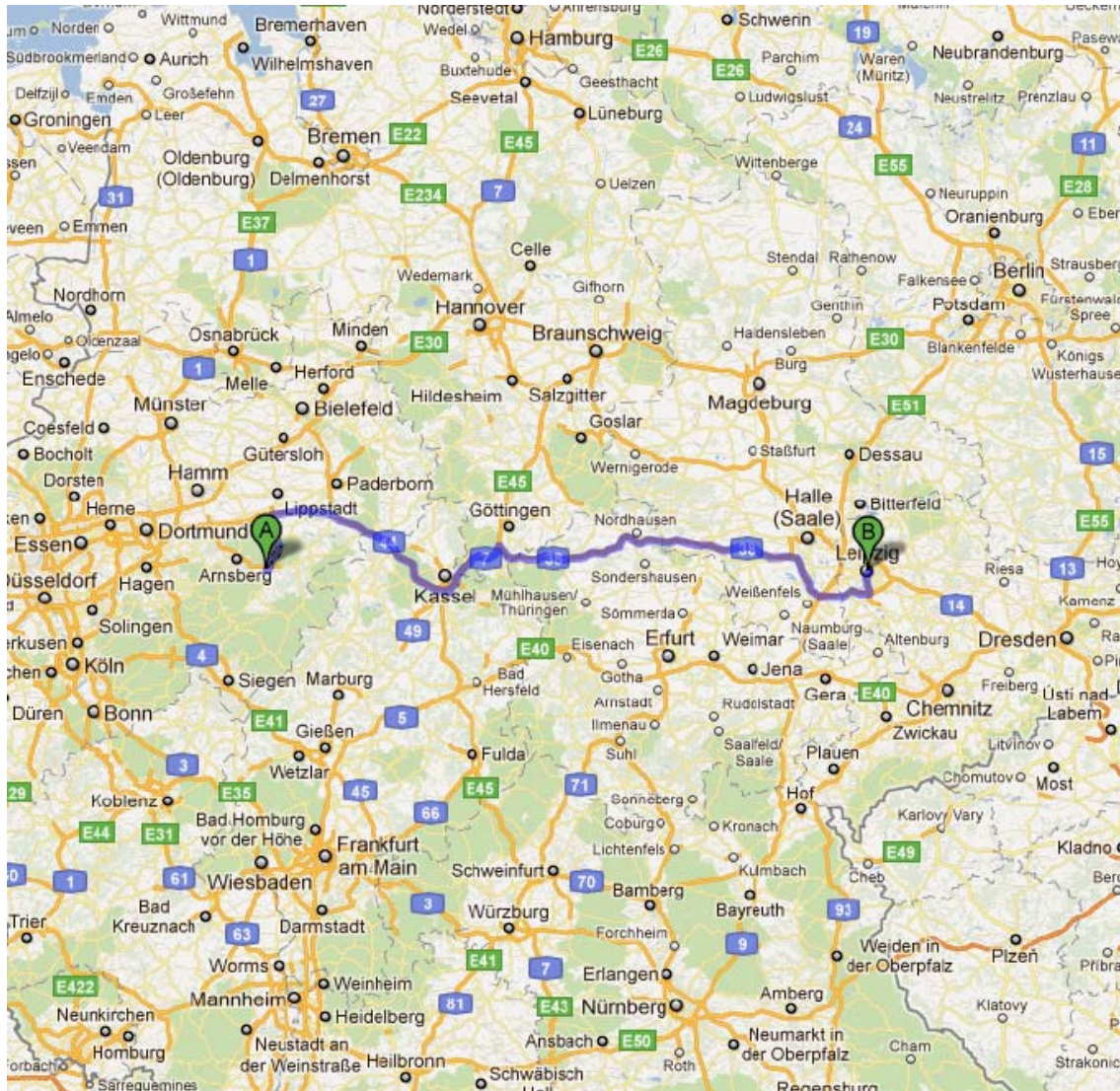
Distance: 85 km



Monday, 26 September 2011

(3) [Meschede - Leipzig]

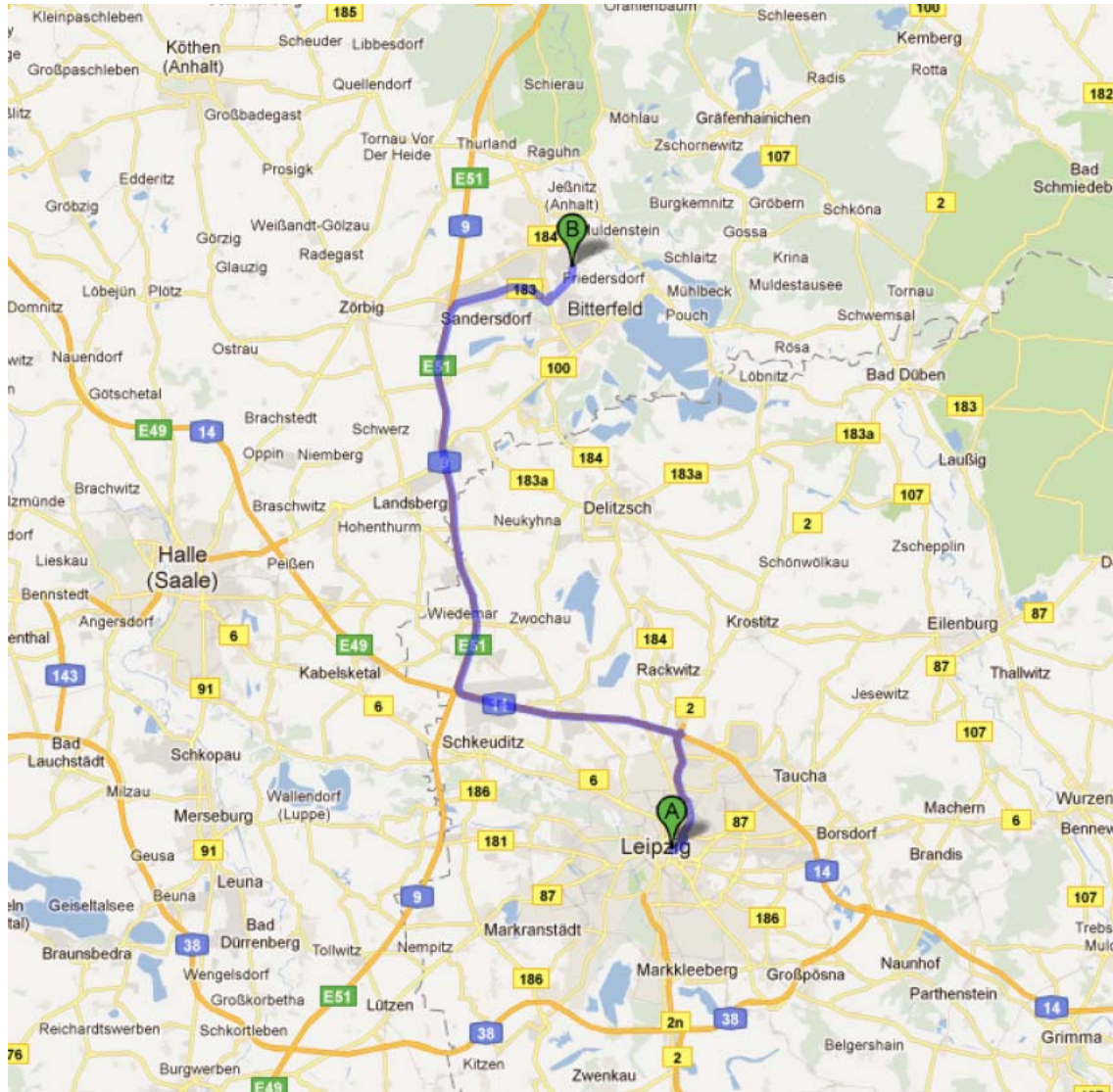
Distance: 387 km



Tuesday, 27 September 2011

(1) [Leipzig – Bitterfeld-Wolfen]

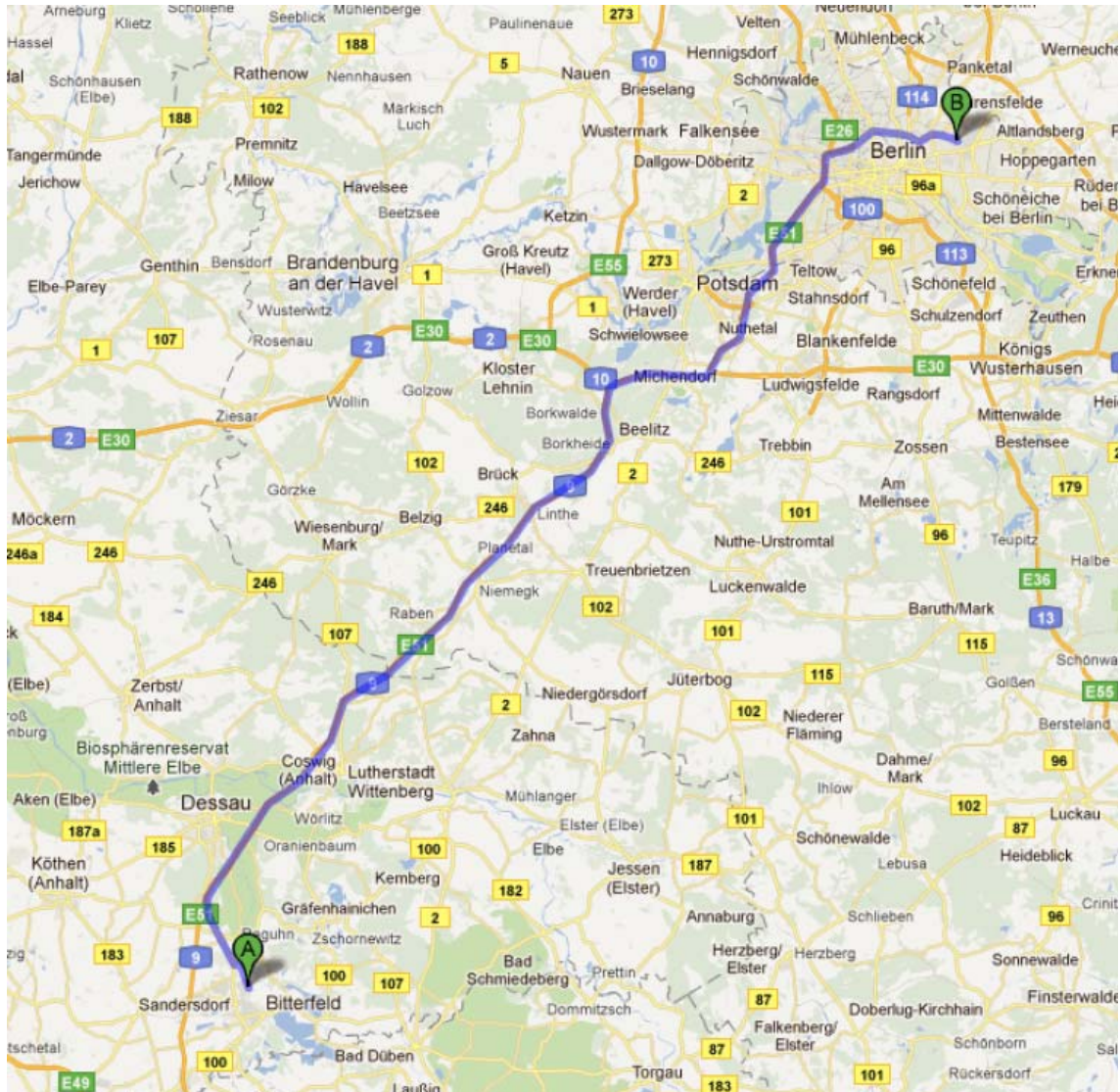
Distance: 54 km



Tuesday, 27 September 2011

(2) [Bitterfeld-Wolfen - Berlin]

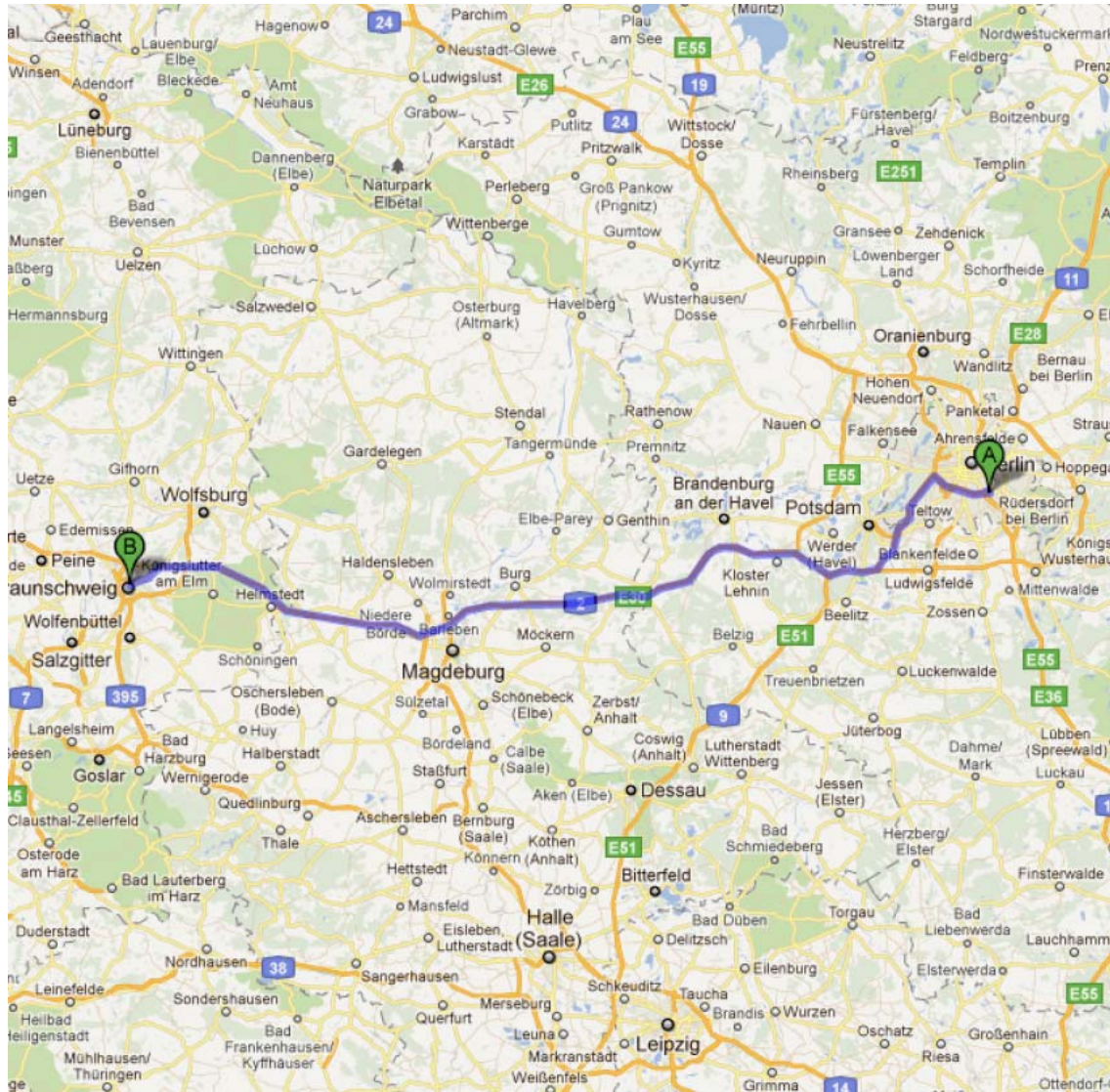
Distance: 153 km



Wednesday, 28 September 2011

(1) [Berlin - Braunschweig]

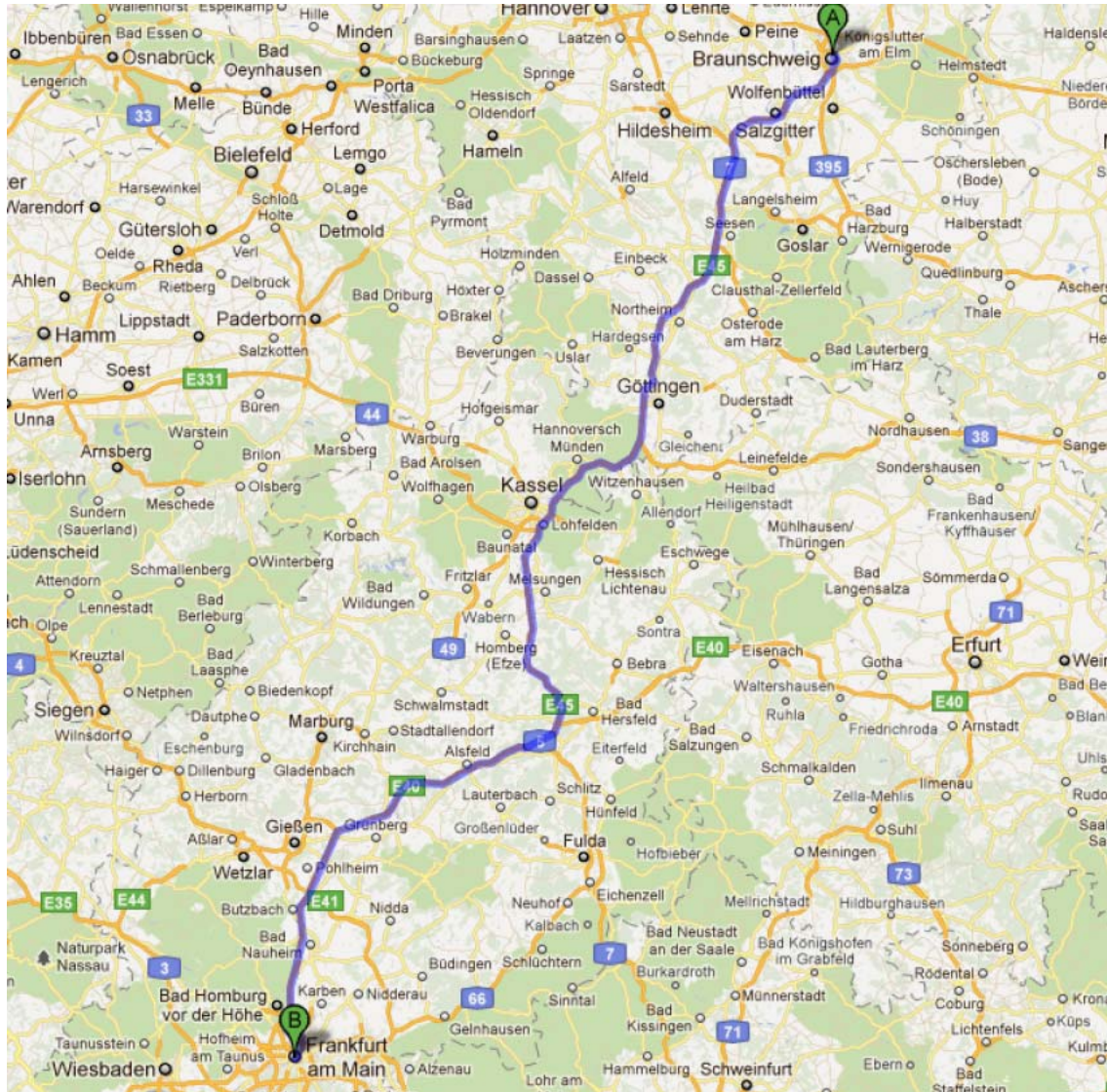
Distance: 234 km



Wednesday, 28 September 2011

(2) [Braunschweig - Frankfurt]

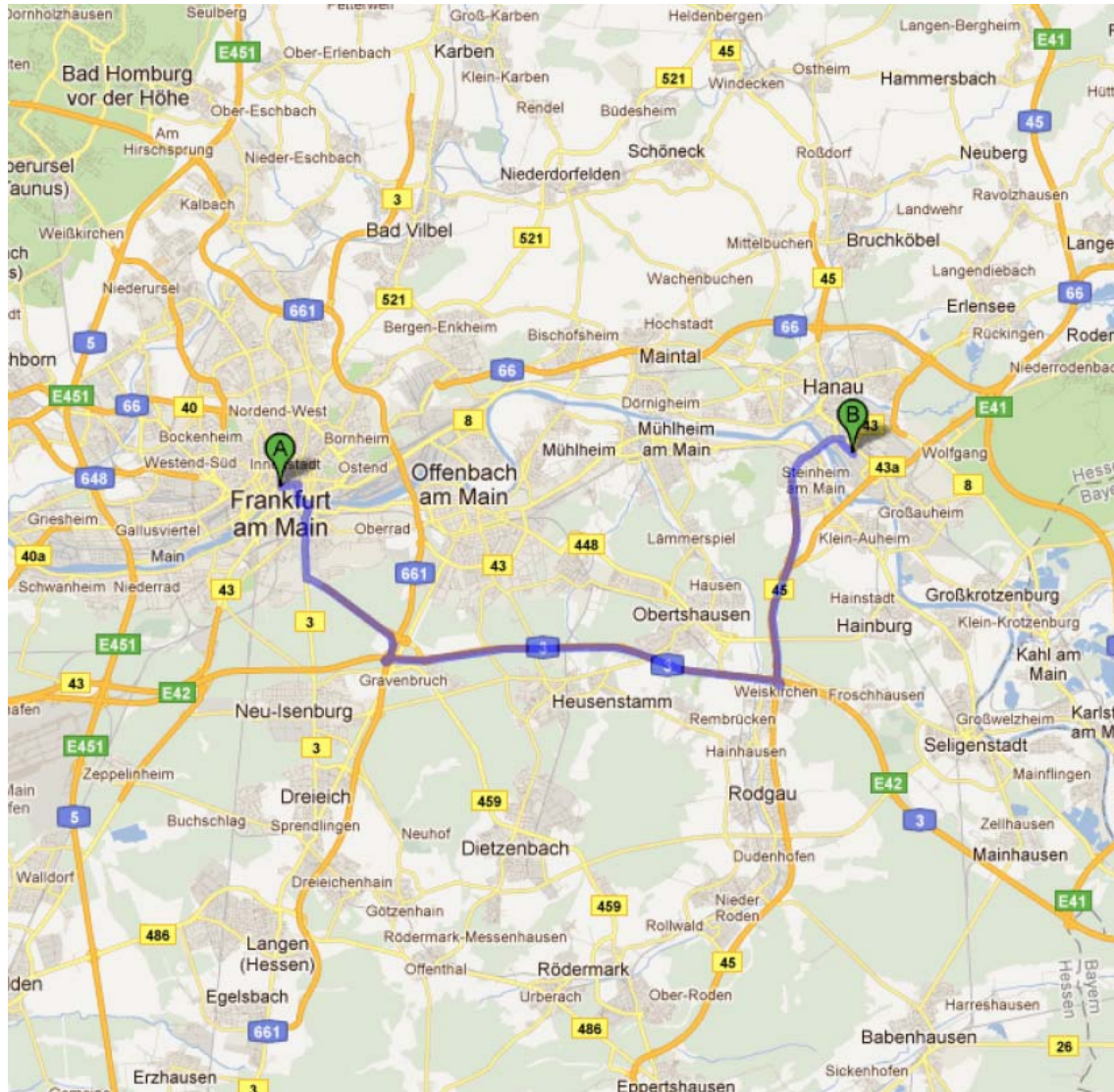
Distance: 338 km



Thursday, 29 September 2011

(1) [Frankfurt - Hanau]

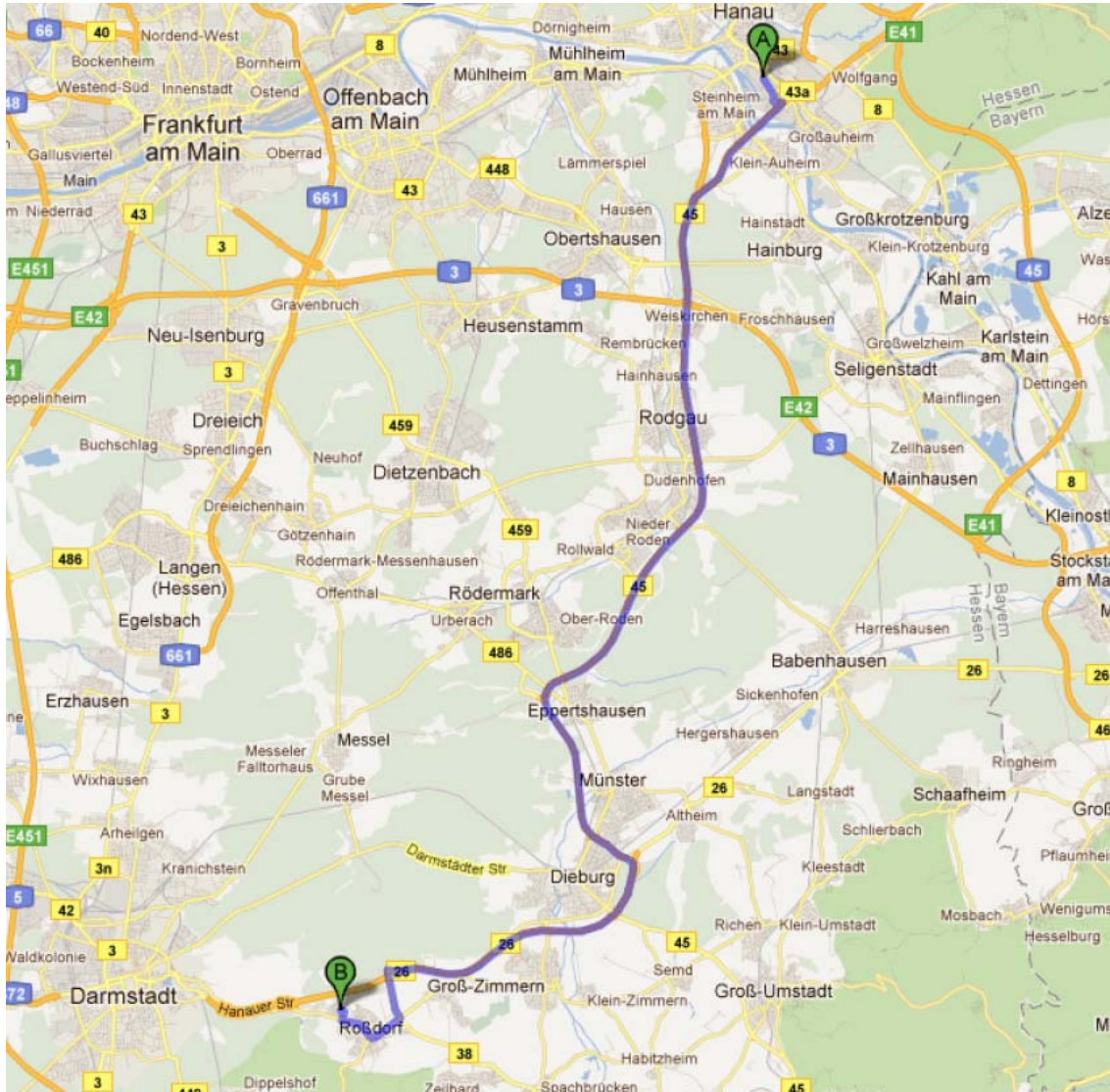
Distance: 30 km



Thursday, 29 September 2011

(2) [Hanau - Rossdorf]

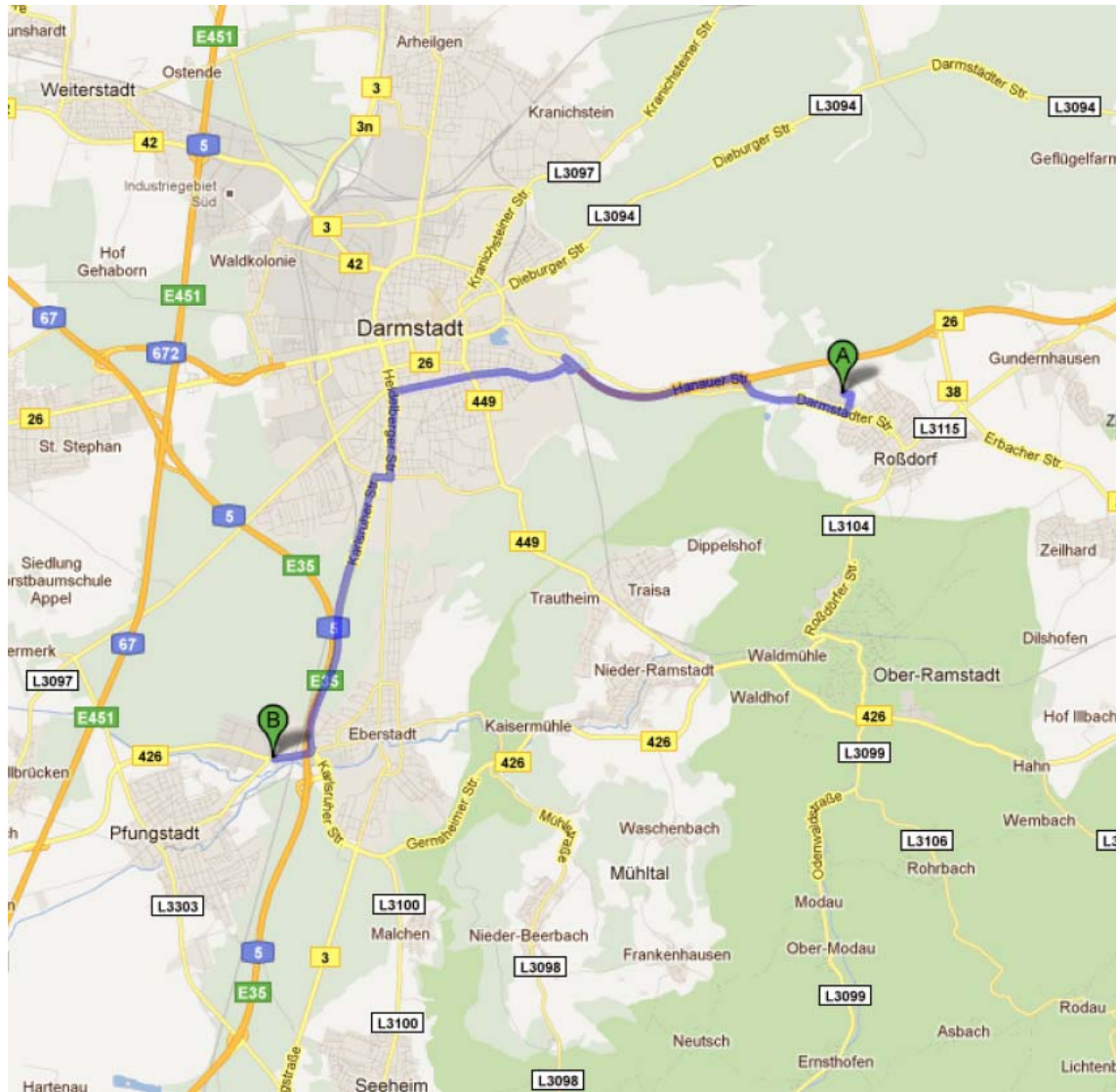
Distance: 42 km



Thursday, 29 September 2011

(3) [Rossdorf - Darmstadt]

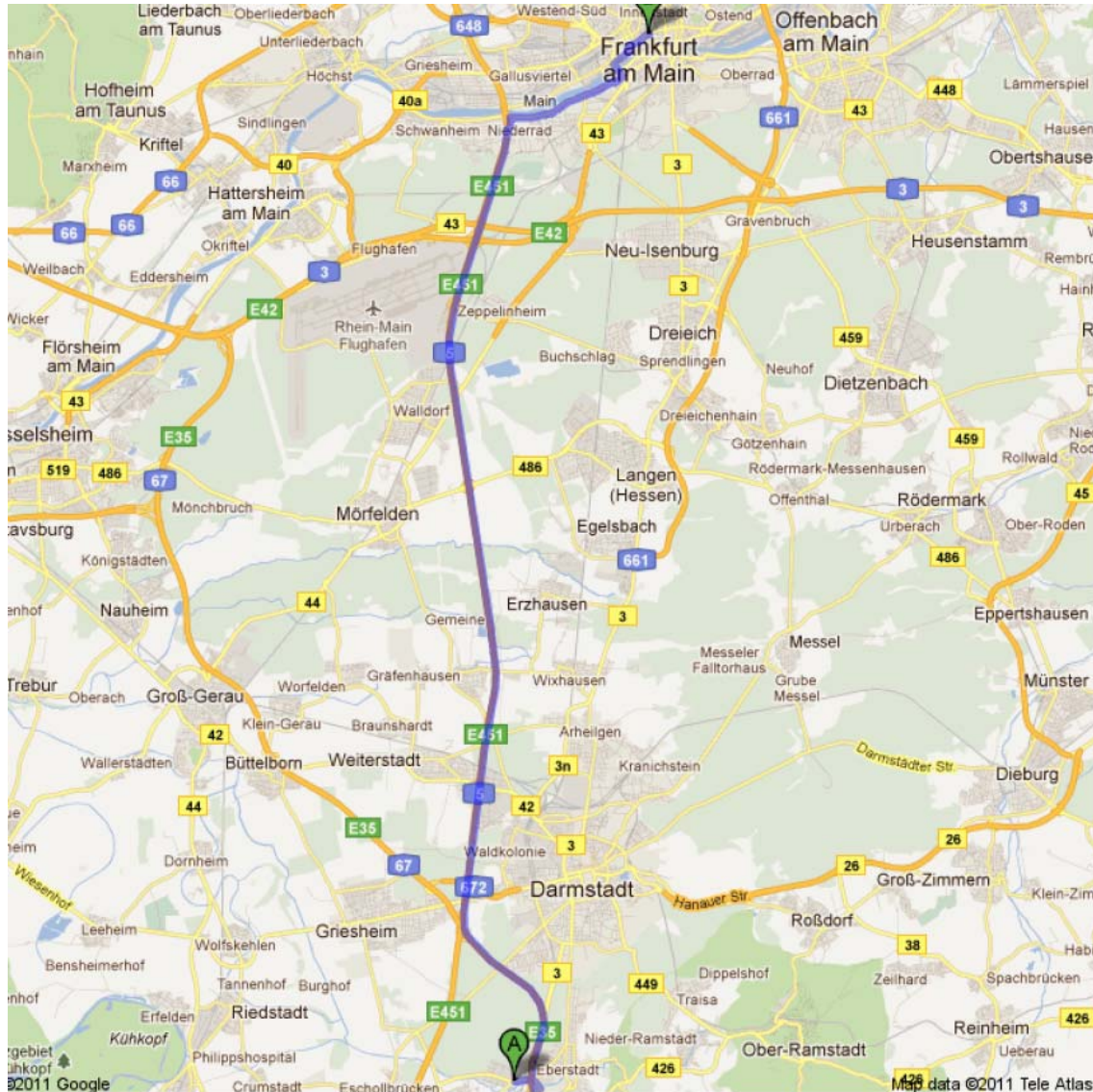
Distance: 15 km



Thursday, 29 September 2011

(4) [Darmstadt - Frankfurt]

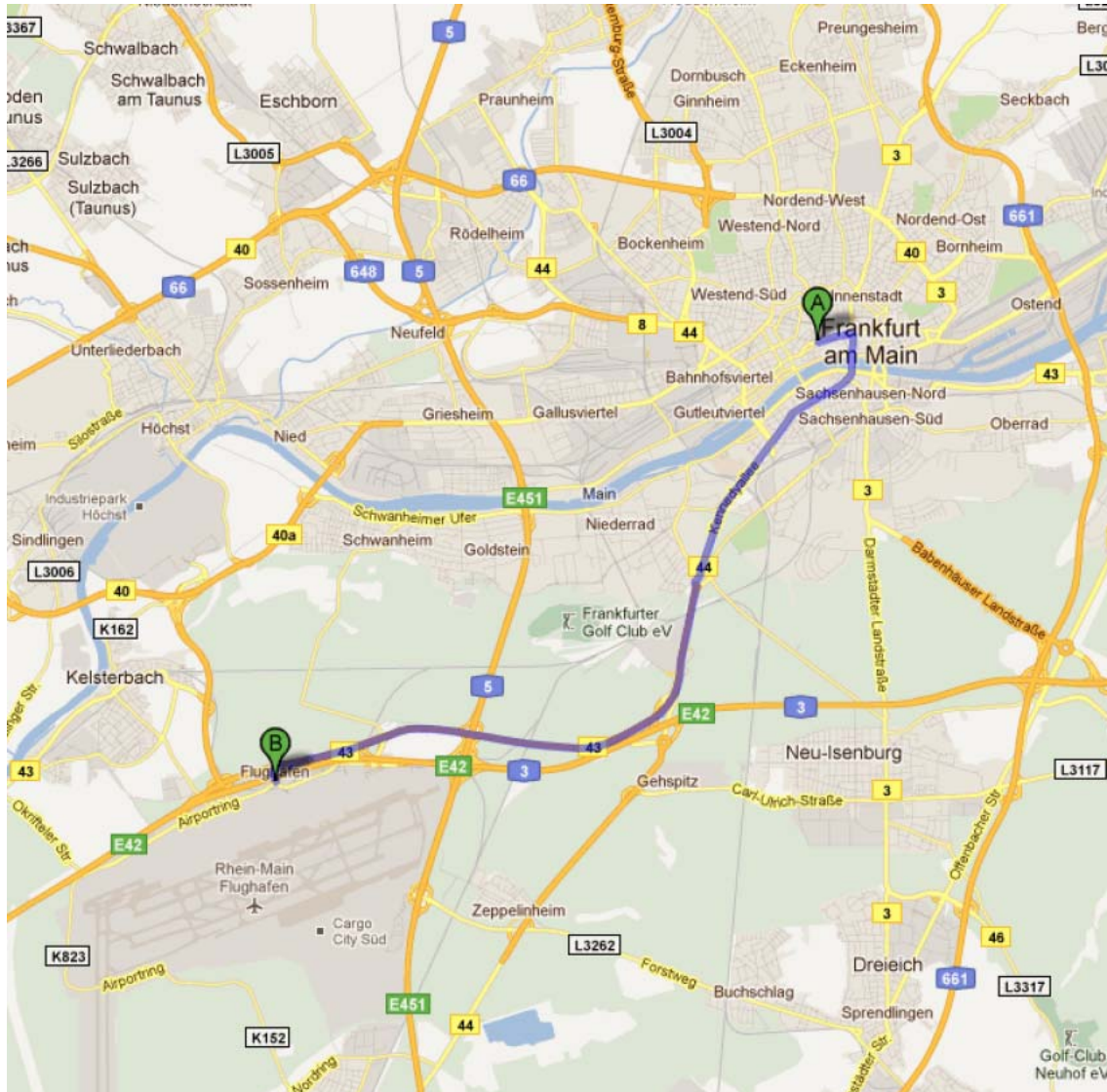
Distance: 40 km



Friday, 30 September 2011

(1) [Frankfurt – Frankfurt Airport]

Distance: 14 km



4. INFORMATION ABOUT VISITING PLACES AND CITIES

4.1 FRANKFURT AIRPORT

Sunday, 25 September and Friday, 30 September

Frankfurt am Main Airport was established in July 6, 1936. Initially the airport was the main base for the airships LZ 127 Graf Zeppelin and LZ 129 Hindenburg, but regular flights were discontinued after the Hindenburg disaster in 1937. After this tragedy and the military use of the airport during World War II the importance of Frankfurt am Main Airport for the international passenger and cargo traffic rose continuously.



Today Frankfurt am Main Airport is one of the most important air-line hubs in the world. The airport is by far the busiest airport by passenger traffic (53,013,771 passengers in 2010) in Germany, the third busiest in Europe and the 9th busiest worldwide (2009). Additionally, Frankfurt am Main Airport is the second busiest airport in Europe by cargo traffic.



Since 1970 it is the base airport of “Lufthansa”, the largest European airline.

About 200 people live on the airport ground of Frankfurt am Main Airport which is a self-contained district of Frankfurt am Main known as “Frankfurt – Flughafen”.

The airport did not emerge as a major international hub until 1958, when its new passenger terminal (Terminal Ost) opened. The runways were extended to 3,000 meters in 1957 and again to 3,900 meters in the following years. In 1962, it was decided to build an even larger terminal building (Terminal Mitte, now Terminal 1), with capacity for 30 million passengers annually. Construction of this terminal began in 1965, and it was opened to the public on 14 March 1972.

Work on a new terminal building began in 1990; Terminal 2 opened in 1994. Frankfurt Airport long-distance station (Frankfurt Flughafen Fernbahnhof) was inaugurated in 1999. It is primarily used by long-distance InterCityExpress trains, while regional/commuter trains (S-Bahn) continue to use the nearby underground regional station.

US Air Force Rhein-Main Air Base was closed in 2005 and the property passed to Frankfurt airport.



4.2 CITY OF DORTMUND

Sunday, 25 September



Dortmund is located in the Bundesland of North Rhine-Westphalia, in the Ruhr area. Its population of 585,045 (in December 2006) makes it the 7th largest city in Germany and the 34th largest in the European Union.

The Ruhr river flows south of the city, and the small river Emscher flows through the municipal area. The Dortmund-Ems Canal also terminates in the Dortmund Port, which is the largest European canal port, and links Dortmund to the North Sea.



Dortmund is known as Westphalia's "green metropolis." Nearly half the municipal territory consists of waterways, woodland, agriculture and green spaces with spacious parks such as Westfalenpark and the Rombergpark. This contrasts with nearly a hundred years of extensive coal mining and steel milling within the city limits.

Cultural history tones are set by the churches in the city centre whose towers characterise the skyline of Dortmund. The Reinoldikirche and the Marienkirche are gems of medieval architecture.

The city centre of Dortmund still retains the outline of the medieval city. A ring road marks the former city wall, and the Westen-/Ostenhellweg, part of a medieval salt trading route, is still the major (pedestrian) street bisecting the city centre.



The biggest stadium in Germany - in Dortmund

Dortmund has historically been

an industrial area. Dortmund is now home to a number of medium-sized information technology companies, many linked to the local university TechnologieZentrumDortmund program. The city works closely with

research institutes, private universities, and companies to collaborate on the commercialization of science initiatives.



The Old Town Hall

4.3 CITY OF WITTEN

Monday, 26 September



Witten is a university city in North Rhine-Westphalia, Germany. It is the home of the Witten/Herdecke University, the first German private university. It is part of the Ruhr, an urban area in North Rhine-Westphalia with multiple prominent universities (in Bochum, Dortmund, Duisburg etc.).



Witten was first mentioned in historic sources in 1214, however the borough Herbede (which was incorporated into the city in 1975) dates back to 851. The city was a mining town from 1578. In 1946, it was included in North-Rhine Westphalia on its establishment.

In 1975 Witten was included in the administrative district Ennepe-Ruhr-Kreis and it is now its biggest city. 1975 was also the year Witten was first counted to have more than 100,000 inhabitants, the threshold to be considered a large city ("Großstadt") in Germany.

Sonja Leidemann (member of the German party „SPD“) is the mayor of the city in which over 98,000 people live.

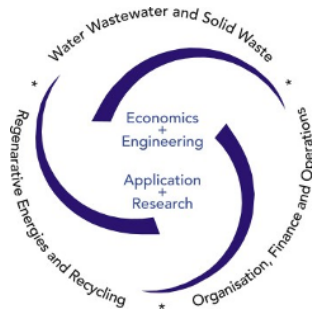
Witten has some memorable landmarks, for example the city hall and the Johanniskirche, which is named after St John.



**Town Hall
in Witten**

4.4 INSTITUTE OF ENVIRONMENTAL ENGINEERING AND MANAGEMENT AT THE UNIVERSITY OF WITTEN/HERDECKE - IEEM

Monday, 26 September



The Institute of Environmental Engineering and Management at the University of Witten/ Herdecke gGmbH (a non-profit registered company limited), managed by Prof. Dr. Dr. Karl-Ulrich Rudolph, integrates the academic fields of "technology" (engineering) and "economics" (management, finance) to form a trans-disciplinary field of science for practical application.

The focus of IEEM lies in the broad field of classical water and sanitation - with a close link to applied environmental economics. Projects of the institute's work today deal with specific aspects of wastewater disinfection, decentralised systems for water reclamation, with integrated process control of collection systems as well as overall strategies for water management using appropriate organisational models. Other projects deal with water efficiency, especially water loss reduction programmes, in research and capacity development.



As independent institute at the private University of Witten/Herdecke, our projects are solely funded by public and private sponsors. Therefore, IEEM's work outputs are clearly focused on practical application and are near to business.

Technologies and economics as pillars of our work are the basic essentials for the development of modern management concepts and organisational structures. Needed to design technical and institutional solutions in an optimal way, including cost-efficient implications, the aim of IEEM is to create and elaborate innovative technical and economic solutions, and to guide their implications, in order to allow sustainable water management and protection of water resources in the environment.



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4.5 CITY OF MESCHEDA

Monday, 26 September



Meschede is a town with about 31,000 inhabitants in the Hochsauerland district, in North Rhine-Westphalia, Germany. It is the capital of the district Hochsauerlandkreis.

Meschede is situated in the Ruhr valley, near to the Hennesee, south of the nature-park Arnsberger Wald. Major towns in the vicinity of Meschede are Paderborn (51 km), Kassel (85 km), Siegen (57 km), Hagen, Dortmund (60 km) and Hamm (49 km).



Meschede is connected with two national roads, the federal roads B 7 and B 55, and the motorway A 46. It has an airfield, the Meschede-Schüren Airfield, with a 900 m runway.

The city's climate is continental. The lowest temperature recorded was -20°C , its highest was recorded at 39°C .



Panoramic View of Meschede in Winter

4.6 HST

Monday, 26 September

The portfolio of HST includes products, systems, turn-key solutions and services for facilities and structures of the water management industry for public utilities as well as for private and industrial facilities. Applications are water works, treatment works, de-tention/retention basins, retention sewers, pump stations, hydroelectric power plants, reservoirs, landfills, etc.

The HST team consist of more than 100 experts from different fields of specialisation whereof ca. 70 are highly qualified technical staff (civil, mechanical and electrical engi-neers, computer scientists, environmental engineers, etc). All projects are coordinated and reviewed in our corporate headquarters in Meschede, Germany. Furthermore HST is active member of several associations like i.e. ATV/DVWK and organises regular trainings and seminars for both employees and clients to come up with the latest national and international developments.



HST has successfully developed from a small niche supplier with view to a system provider with innovative products and solutions within the water sector. HST has adapted the business model in order to provide flexible, eco-nomical

and sustainable system solution. The lead holding HST Systemtechnik GmbH is organised according to the specific fields of: stormwater equipment, sewer works equipment, treatment plant design and equipment and integrated IT.



HST Systemtechnik GmbH

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Tel: +49 (291) 99290 - Fax: +49 (291) 7691

E-Mail: info@systemtechnik.net

Web: <http://www.systemtechnik.net/>

4.7 CITY OF LEIPZIG

Monday, 26 September

Leipzig is, with a population of appr. 524,000, one of the largest cities in the federal state of Saxony, Germany. It is situated about a hundred miles south of Berlin at the confluence of the rivers Weisse Elster, Pleisse and Parthe in the Leipzig Lowland, adjunct to the North European Plain.

Leipzig was first documented in 1015 during the chronicles of Bishop Thietmar of Merseburg and endowed with city and market privileges in 1165 by Otto the Rich. Leipzig has fundamentally shaped the history of Saxony and of Germany and has always been known as a place of commerce. The Leipzig Trade Fair, started in the Middle Ages, became an event of international importance and is the oldest remaining trade fair in the world.



New trade fair centre in Leipzig



In the 17th century, Leipzig was one of the major European centres of learning and culture in fields such as music, astronomy and optics. After World War II, Leipzig became a major urban centre within the Communist German Democratic Republic.

“Gründerzeit” building in Leipzig



Leipzig later played a significant role in the fall of communism in Eastern Germany, through events taken place in and around St. Nicholas Church. Since the reunification of Germany, Leipzig has undergone significant change with the restoration of historical buildings and the development of a modern transport infrastructure. In 2006, Leipzig hosted some games in the FIFA World Cup.

Leipzig has many buildings representative of “Gründerzeit” architecture. The city also has numerous parks and forested areas and a zoo containing the

biggest house in the world for primates. In 2010, Leipzig was included in the top 10 of cities to visit by the New York Times.

Old city centre in Leipzig



4.8 CENTRAL WASTEWATER TREATMENT PLANT OF INDUSTRIAL PARK BITTERFELD-WOLFEN

Tuesday, 27 September

With the joint sewage treatment plant of Bitterfeld-Wolfen (CWWTP) an advanced wastewater treatment plant (which was one with the largest cleaning capacity) went into operation in 1994.

The CWWTP treats the wastewater of the Industrial Chemical Park Bitterfeld Wolfen GmbH and the municipal wastewater of 11 municipalities of the wastewater association "Westliche Mulde".

The capacity of the plant is 422,000 PE (population equivalent). By integrating the CWWTP in the measures of groundwater remediation at the Bitter-



feld site (Ecological major project) a very good full utilization of the existing cleaning capacity is reached. Currently, the CWWTP is extended by a further treatment stage.

The environmentally sound disposal of sewage sludge is occurring in the sludge incinerator in compliance with all legal requirements.

Company Data

- Form of enterprise: GmbH
- Share capital: 27.500 EUR
- Revenues: EUR 15.0 million
- Operator: GKW mbH & Co. KG Greppin
- Employees: 50 employees

Gemeinschaftskläwerk Bitterfeld- Wolfen GmbH

Salegaster Chaussee 2, 06803 Bitterfeld-Wolfen, Germany

Operator:

GKW Betriebsgesellschaft mbH & Co. KG Greppin

Salegaster Chaussee 2, 06803 Bitterfeld-Wolfen, Germany

Tel.: +49 (0) 3493 7 3093, Fax +49 (0) 3493 7 2187

E-mail: info@gkw-bitterfeld-wolfen.de

Web: <http://www.gkw-bitterfeld-wolfen.de>

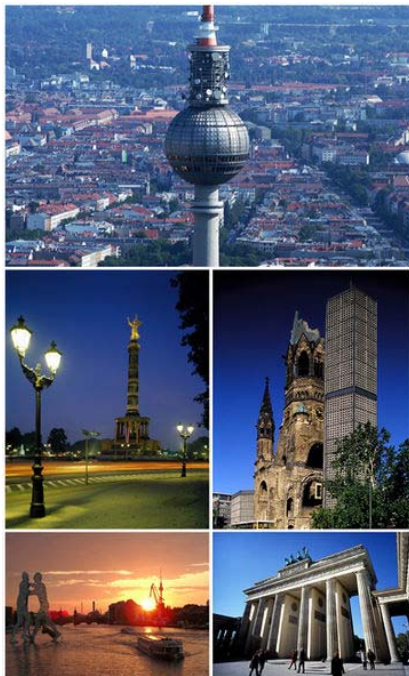
4.9 CITY OF BERLIN

Tuesday, 27 September

Berlin is the capital city of Germany and is one of the 16 states of Germany. With a population of 3.45 million people, Berlin is Germany's largest city. It is the second most populous city proper and the seventh most populous urban area in the European Union. Located in northeastern Germany, it is the center of the Berlin-Brandenburg Metropolitan Region, which has 4.4 million residents from over 190 nations. Located in the European Plains, Berlin is influenced by a temperate seasonal climate. Around one third of the city's area is composed of forests, parks, gardens, rivers and lakes.



First documented in the 13th century, Berlin was the capital of the Kingdom of Prussia (1701–1918), the German Empire (1871–1918), the Weimar Republic (1919–1933) and the Third Reich (1933–1945). Berlin in the 1920s was the third largest municipality in the world. After World War II, the city became divided into East Berlin—the capital of East Germany—and West Berlin, a West German exclave surrounded by the Berlin Wall (1961–1989). Following German reunification in 1990, the city regained its status as the capital of Germany, hosting 147 foreign embassies.



Berlin is a world city of culture, politics, media, and science. Its economy is primarily based on the service sector, encompassing a diverse range of creative industries, media corporations, and convention venues. Berlin also serves as a continental hub for air and rail transport, and is a popular tourist destination. Significant industries include IT, pharmaceuticals, biomedical engineering, biotechnology, electronics, traffic engineering, and renewable energy.

Berlin is home to renowned universities, research institutes, orchestras, museums, and celebrities, as well as host of many sporting events. Its urban settings and historical legacy have made it a popular location for international film productions. The city is well known for its festivals, diverse architecture, nightlife, contemporary arts, public transportation networks and a high quality of living.

4.10 LAR - PROCESS ANALYSER AG

Wednesday, 28 September

LAR Process Analysers AG was founded in 1986 as a customer-oriented company with the corporate objective to develop, manufacture, and distribute technically advanced instrumentation for environmental measurement and related services. The major proportion of the product range is self-developed, continuously operating water analysers used for process control, pure water analysis as well as industrial and municipal waste water technology.



In 1989, the company achieved a special award from the State of Berlin for environmental technology, specifically for the EloxMonitor, an on-line analyser for the determination of the chemical oxygen demand (COD). Ever since, the customer-oriented development of innovative products has been cultivated as the core of our company's philosophy. In 1996, LAR received a combined special award for environmental engineering by the Federal States of Berlin and Brandenburg for the NitritoxMonitor®.

LAR Process Analysers AG gained world-wide recognition among others with analysers for measurement of TOC and COD. These analysers stand out for the accuracy and precision of their measurements, their low costs of ownership and their long durability.



In 2006 LAR Process Analysers AG celebrated the remarkable success of developing its 21st product in 20 years with the QuickTOC effluent. This achievement was made possible by the hard work of all members of staff, of whom LAR is rightly proud.

Today, more than 40 people are employed at the Berlin headquarters alone and more than 40 distributors around the world ensure a close and reliable customer service.

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4.11 CITY OF BRAUNSCHWEIG

Wednesday, 28 September

Braunschweig (English: Brunswick), is a city of 247,400 people, located in the federal-state of Lower Saxony, Germany. It is located north of the Harz mountains at the farthest navigable point of the Oker river, which connects to the North Sea via the rivers Aller and Weser.



The date and circumstances of the town's foundation are unknown.

Tradition maintains that Braunschweig was created through the merger of two settlements, one founded by Bruno II, a Saxon count who died before 1017 on one side of the river Oker – the legend gives the year 861 for the foundation – and the other the settlement of a legendary Count Dankward, after whom Castle Dankwarderode (Dankward's clearing), which was reconstructed in the 19th century, is named.



Braunschweig was a member of the Hanseatic League from the 13th century to the middle of the 17th century. In the 18th century Braunschweig was not only a political, but also a cultural centre.

The main sights are:



The Altstadtmarkt ("old town market"), surrounded by the old town hall (built between the 13th and the 15th centuries in Gothic style), and the Martinikirche (church of Saint Martin, from 1195).

The Kohlmarkt ("coal market"), a market with many historical houses and a fountain from 1869.

The Magniviertel (St Magnus' Quarter), a remainder of ancient Braunschweig, lined with cobblestoned streets, little shops and cafés, centred around the 13th-century Magnikirche (St Magnus' Church). Here is also the Rizzi-Haus, a highly distinctive, cartoonish office building designed by architect James Rizzi for the Expo 2000.



4.12 INSTITUTE OF SANITARY AND ENVIRONMENTAL ENGINEERING AT THE TECHNICAL UNIVERSITY OF BRAUNSCHWEIG

Wednesday, 28 September

In 1987 an independent Institute for Sanitary and Environmental Engineering was formally established within the School of Civil Engineering, as a consequence of the highly acclaimed research work of Dr.-Ing. Dr. techn.

h.c. Rolf Kayser. Professor Dr.-Ing. Norbert Dichtl was appointed as head of the Institute for Sanitary and Environmental Engineering in 1994.



Research and development work of the institute and our expert reports cover the two major topics wastewater and sludge treatment with all their diverse scientific aspects. A special focus is on the development of advanced biological wastewater treatment methods (e.g. SBR-technology, bio-filtration, anaerobic wastewater treatment) and the optimization of physical, chemical and biological treatment processes for industrial wastewaters and landfill leachate. .

Our work includes dimensioning of wastewater treatment plants by calculation and dynamic simulation. We determine calculation data, work out concepts and offer scientific monitoring and recommendations especially for the start-up phase of large-scale wastewater treatment plants. Also we develop new treatment concepts in regard to minimizing energy and resource demand.



A special emphasis of our research and development activities is in sludge treatment. Activities range from sludge treatment concepts and optimization of sludge stabilization to determination of dewatering parameters and conditioning agent demand. We also conduct lab-scale dewatering tests, full-scale investigations or concept studies for energy recycling. Recycling of resources (e.g. phosphorus) from sludge is another important topic.

According to the principle "Reduce-Reuse-Recycle", the institute is dedicated to the goals of the Agenda 21 and to a sustainable environmental protection in its research work. Therefore we pay special attention to problems in threshold and developing countries.

Institute of Sanitary and Environmental Engineering

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4.13 CITY OF FRANKFURT

Wednesday, 28 September – Friday, 30 September

Frankfurt am Main, commonly known simply as Frankfurt, is the largest city in the German state of Hesse and the fifth-largest city in Germany, with a 2010 population of 688,249. The urban area had an estimated population of 2,295,000 in 2010. The city is at the centre of the larger Frankfurt/Rhine-Main Metropolitan Region which has a population of 5,600,000 and is Germany's second largest metropolitan area.



Situated on the Main River, Frankfurt is the financial and transportation centre of Germany and the largest financial centre in continental Europe. It is seat of the European Central Bank, the German Federal Bank, the Frankfurt Stock Exchange and the Frankfurt Trade Fair, as well as several large commercial banks.



In addition, many large trade fairs are held in Frankfurt each year, notably the Internationale Automobil-Ausstellung, the world's largest motor show, and the Frankfurt Book Fair (Frankfurter Buchmesse), the world's largest book fair, and Musikmesse world's largest music fair.

Frankfurt is also home to many cultural and educational institutions including the Johann Wolfgang Goethe University, many museums, and two major botanical gardens, the Palmengarten and the Botanischer Garten der Johann Wolfgang Goethe-Universität Frankfurt am Main.



Frankfurt is one of only three cities in the European Union that have a significant number of skyscrapers. With 12 skyscrapers (i.e. buildings taller than 150 m (492 ft)) in late 2010, Frankfurt is second behind Paris with 14 skyscrapers, and ahead of London which has 10 skyscrapers. The city of Frankfurt contains the two tallest skyscrapers in the European Union, the Commerzbank Tower and Messeturm, which rank third and fourth on the continent after the Naberezhnaya Tower and the Triumph-Palace in Moscow.

4.14 CITY OF HANAU

Thursday, 29 September

Hanau is a town in the Main-Kinzig-Kreis, in Hesse, Germany and has about 89,000 inhabitants. It is located 25 km East of Frankfurt am Main.

As a place of settlement Hanau was first mentioned in 1143. Then it was the site of a castle which used the waters of the River Kinzig as a defense. The castle belonged to a noble family, calling themselves as "of Hanau" since the 13th century. Starting from this castle a village developed and became a town in 1303.

During World War II, Hanau was for the most part destroyed by British airstrikes in March 1945 a few days before it was taken by the US Army. It housed a large US Army garrison until 2008.

In 2010 they started a huge building project to completely redesign the inner city. Those are the biggest workings in the city after the reconstruction of World War II.

At present, many inhabitants work in the technological industry or commute to Frankfurt. Frankfurt International Airport is only 30 km away.



Old Town Hall of Hanau



Philippsruhe Palace of Hanau

4.15 PASSAVANT-ROEDIGER

Thursday, 29 September

Passavant-Roediger stands for tradition, experience and development. In the field of water, waste, wastewater and sludge treatment.

Their main activities in environmental technology are:

PASSAVANT ROEDIGER

- Engineering, technology, complete equipment delivery and technical services for municipal wastewater treatment plants worldwide
- Turn-key plants for municipal and industrial wastewater treatment
- Engineering, technology, complete equipment delivery and technical services for sludge digestion plants, digester gas treatment and utilization
- Advanced equipment for aeration, mechanical sludge thickening and dewatering
- Advanced technology, engineering, complete equipment and technical services for extended wastewater treatment facilities (e.g. for wastewater re-use for industry or infrastructure purposes)
- Waste treatment (thermophilic anaerobic bio-waste fermentation)
- Potable water treatment
- Industrial water treatment
- Design, engineering and complete equipment for thermal sludge drying plants

The long-term experience and ample knowledge in the field of water conditioning and wastewater clarification makes Passavant-Roediger a highly qualified partner for the construction and commissioning of such plants and installations as:



Municipal wastewater treatment, industrial wastewater treatment, drinking and process water treatment, municipal waste treatment, hydropower and cooling water treatment.

Passavant-Roediger also offers high-end turnkey plants, thus a customised approach.

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4.16 CITY OF ROSSDORF

Thursday, 29 September



Roßdorf is a municipality in the district of Darmstadt-Dieburg, in Hesse, Germany. It has a population of 12,169 (2007). It is situated 8 km East of Darmstadt.

The first official mention of Roßdorf is in the year 1250. At this time, Abbot Heinrich vested Counts Diether and Eberhardt I of Katzenelnbogen with the villages of Roßdorf and Gundershausen. In 1479, the family line died out and their inheritance went to Landgrave Heinrich III of Hesse.



In 1621, Bavarian soldiers took up quarters in Roßdorf and plundered the town. In addition, witch-hunts took place, during which the inhabitants were accused of witchcraft. The worst period for Roßdorf was in the years 1634/35, during the Thirty Years' War. The forces of the Holy Roman Empire and Sweden opposed each other in the region, each in turn laying waste to and scavenging the entire countryside and heavily decimating the population. In the summer of 1635, the plague broke out, reducing the number of inhabitants to 50. In 1672, during the Franco-Dutch War, Louis XIV's troops took up quarters. In 1814, Russian soldiers passed through on their way to France.

In 1852, Roßdorf was incorporated into the district of Darmstadt.



Protestant Church in Rossdorf

4.17 ENVIROCHEMIE

Thursday, 29 September

The core competence of Environchemie lies in the provision of innovative, tailored plant engineering solutions for the water and wastewater treatment sector. With their track record of having supplied 25.000 water and wastewater treatment plants and with 35 years of experience in the field, they are able to draw on a wealth of knowledge when designing their high-quality products at their in-house R&D department.



The cutting-edge solutions of Environchemie, which are based on physico-chemical, biological and membrane technologies are protected by numerous patents registered by the company and their own in-house developments. Leading companies from around the world and representing a range of sectors are already relying on their expertise. The seven sites in Germany and Switzerland where Environchemie develops and manufactures their products ensure flexible and high-quality production.

Technical solutions for the following industries are developed:

- solar, glass, ceramics, optics
- metal, electronics, automotive
- food, beverage
- chemical, pharmaceutical, cosmetics
- transport
- textile, laundry
- waste, landfill, energy
- facilities, trade building services



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4.18 CITY OF DARMSTADT

Thursday, 29 September

Darmstadt is a city in the Bundesland (federal state) of Hesse in Germany, located in the southern part of the Rhine Main Area and has about 145,000 inhabitants.

As the administrative centre of an increasingly prosperous duchy, the city gained in prominence during the following centuries. In the 20th century, industry (especially chemicals) as well as large science and electronics (later information technology) sectors became increasingly important, and are still a major part of the city's economy. Darmstadt also has a large tertiary education sector, with three major universities and numerous associated institutions.

Darmstadt is one of few cities (as opposed to smaller towns) in Germany which does not lie close to a river, lake or coast. It can also boast being the sunniest city in the state of Hesse. The chemical element Darmstadtium (atomic number 110) is named after it, having been synthesised in the GSI Centre for Heavy Ion Research in Darmstadt-Wixhausen.

The European Space Operations Centre (ESOC) of the European Space Agency is located in Darmstadt. From here, various deep-space exploration spacecraft and Earth-orbiting satellites are operated for the purposes of scientific research, and technology development and demonstration.



The “Waldspirale” ('Forest Spiral'), a residential complex by Austrian Friedensreich Hundertwasser, was built 1998–2000. An almost surreal building, it is internationally famous for its almost absolute rejection of rectangular forms, down to every window having a different shape, the style being a trademark of Hundertwasser's work.

4.19 INSTITUTE OF WATER SUPPLY AND GROUNDWATER PROTECTION, WASTEWATER TECHNOLOGY, WASTE MANAGEMENT, INDUSTRIAL MATERIAL CYCLES, ENVIRONMENTAL AND SPACIAL PLANNING AT THE TECHNICAL UNIVERSITY OF DARMSTADT (IWAR) – CHAIR OF WASTEWATER TECHNOLOGY

Thursday, 29 September

The Institute IWAR is one of 13 institutes the Department of Civil Engineering and Geodesy at the Technical University of Darmstadt. By integrating different disciplines, the Institute IWAR contributes to the scientific and practical solve complex and interdisciplinary tasks in environmental and water protection. Besides those mentioned in the description fields of the Institute, the Institute is also concerned with the areas of water quality management, waste management and hazardous waste sites.



The facilities of the institute includes a library with a stock of about 15,500 books and 54 periodicals, a workshop and a laboratory and various test facilities. These are located both at the institute and in an experimental hall at the light meadows and on the branch of the Institute in Darmstadt-Eberstadt.

Darmstadt Technical University

Institute of Water Supply and Groundwater Protection, Wastewater Technology, Waste Management, Industrial Material Cycles, Environmental and Spatial Planning (IWAR), Chair of Wastewater Technology

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