challenge accepted!
BWKENGINEERS was founded in 2007. We provide the following services: planning design, consulting, design revision and on-site design follow-up. BWKENGINEERS offer full support to architects - design of HVAC, electrical, public health, sprinkler and fire protection - all building services. We also produce superimposed plans of all services. All services can be designed in 2D (Auto Cad) or 3D (Revit).
Heating, ventilating and air-conditioning design done in our bureau is at highest technical level as we apply of most up-to-date and optimal solutions for specific buildings. Our engineers have experience with different types of buildings in Serbia and abroad, in residential sector (residential buildings, hotels, offices), and also high demand buildings from HVAC point of view (museums, pharmacy, hospitals, etc.). When needed, all the design documentation and calculation can be produced according to local (Serbian) standards, British (BS), American (ASHRAE) or Russian (SNIP). In the design process we use standard foreign and domestic software for calculation and producing the drawings. Besides standard design, we can offer energy optimisation analysis, creation of 3D thermodynamic models of buildings, recommendation for optimal building orientation and envelope layers, and yearly energy consumption of buildings. When architectural design is complicated or very strict control of thermal comfort in the space is needed (i.e. museums, botanical gardens) - results gathered using conventional methods of calculations are not reliable and satisfactory enough. We can offer CFD (computational fluid dynamics) analysis which gives distribution of air velocities and temperatures in space as a result in order to obtain highest level of thermal comfort for user.

PASSIVE HOUSES.
The most important and cost effective element of an efficient hvac system is a well insulated building. Besides the selection of optimum insulation thickness, recommendation about building orientation, orientation and number of windows, as well as their construction and glass type, the design of passive house is complete with energy efficient HVAC services - as hvac services are major electricity consumers. The appliance of ventilation systems with heat recovery, usage of renewable energy sources (sun, geothermal energy, wind) and recommendation of optimal solution for given facility are integral part of passive house designs done by our engineers.
Design of MV electrical services, MV and LV switchgear, diesel generators, lighting and BMS (building management system) are the challenges that our engineers meet every day when searching for appropriate solutions. These solutions can meet by their characteristics the most different client's demands and mandatory international standards and norms. Energy efficiency, optimised design and user friendly solutions are terms present in all phases of design in our bureau. Up-to-date software for lighting design implemented in demanding architectural interior and exterior produces top quality solutions. Buildings are treated with bearing in mind the way that light affects the space, on one hand, and reducing electrical energy consumption, ease of maintenance and most importantly, the safety and comfort of the user on the other. We can perform daylighting analysis in order to obtain satisfactory daylight level in the building. The goal of this analysis is to provide enough daylight in spaces with respect to purpose on one side, while keeping heat load within desired range. Designed and built facilities are the best proof of the above stated. With detailed energy analysis of electricity consumption, categorising the users and future needs estimation, we propose a solution which should provide long-term and reliable electricity supply. Energy monitoring, repression of unfavorable effects of various consumers, back up and safety sets guarantee the most important thing – the safety of human lives and material assets.

Telecommunication, safety and signal systems are integral part of the work which can be offered within our services. We design IT systems in accordance with the newest hardware and software solutions which support various services (voice communication, data transmission and reception, internet access, networking, etc.). Apart from solutions based on IP technology, we design classic systems for reception and transmission of radio and TV signal, and public address systems - for ambient music, information messages and alarm notifications in case of emergency. Within safety systems, we design most up-to-date video surveillance systems, anti burglar systems, access control systems, working hours control on one hand and intercom on the other. Signal systems like detection and alarm, gas detection, as well as alarm systems for old, sick and disabled persons we also offer within extra low voltage design.

INTELLIGENT BUILDING represents the connection of technology and way of living. Optimal usage of energy, reduction of costs, better productivity and simple facility management are the result of integration of all systems present in the building (lighting, doors and windows control, security, audio/video and other telecommunication systems). Intelligent building provides better autonomy for disabled persons and makes it much easier to control all building systems. We can reply to various users' demands and suggest software and hardware upgrade to suit new technologies progress and user's needs.
Public health design done in our bureau satisfies highest design standards for all kinds of buildings or technological process. Members of our design team obtained experience in most different projects which they did for Serbian market, as well as foreign market - complete design documentation can be done according to local (Serbian) or international standards (BS, ASHRAE, SNIP). Public health services designed in our bureau guarantee minimum impact on architecture of the building, but also precise superimposed plan with all other building services which makes it much easier for the contractor. For more demanding projects, when sustainable systems are of great importance, we also offer solutions with maximal rationalization of consumption of domestic water, and water recycling within the building - for both residential and industrial facilities. Depending on the purpose of facility and investor's request we can also propose refinement (and re-use) of rainwater and so-called “grey” wastewater, with all appropriate services and equipment for its use in the building or nearby (irrigation systems).

Our team that covers sprinkler and fire protection areas consists of experts - engineers with extensive experience in the developement and planning of automatic detection and fire distinguish systems design of risk fire control systems, preparing complete reports with risk zones and development of general concept and strategy of fire protection. Numerous references of our team show extreme adaption to users’ needs and capability of our engineers to design protection systems on all levels of design complexity on one hand, and to find solutions for specific conditions and demands of client. Our team can provide the following services: firefighting reports, studies of fire protection zones, design of fire detection systems and design of fire distinguish systems. All our design is done according to the latest versions of local (serbian) and foreign (bs, snip) standards and regulations for fire protection. With substantial theoretical knowledge in all relevant areas related to problems of fire protection and risk control, our team is informed about latest scientific and technical solutions, and guarantees quality of service with many years of teamwork experience in problem solving and contracting.
Location: Novi Sad, Serbia
Client: Ocean Atlantic Ltd, Serbia
Area: 90,000sqm
Year: 2009

Location: Belgrade, Serbia
Client: MYS Architects, Israel
Area: 19,000sqm
Year: 2012
**PHARMACY INDUSTRY “FARMONT”**

- **Location**: Danilovgrad, Montenegro
- **Client**: ČIP Ltd, Montenegro
- **Area**: 6,000 sqm
- **Year**: 2008

**CHILDREN’S HOSPITAL JELLAH**

- **Location**: Tripoli, Libya
- **Client**: Neimarstvo, BIH
- **Area**: 8,400 sqm
- **Year**: 2009
OLYMPIC VILLAGE BONGOVILLE

Location: Bongoville, Gabon
Client: Cabinet 2G, Gabon
Area: 9,000sqm
Year: 2009

FOOTBALL STADIUM FOR 2012
AFRICAN CUP OF NATIONS

Location: Libreville, Gabon
Client: Cabinet 2G, Gabon
Area: 50,000sqm
Year: 2010
**SPORTS HALL**

Location: Kraljevo, Serbia  
Client: DZP  
Area: 6,000 sqm  
Year: 2011

**HOTEL “RADISSON”**

Location: Sochi, Russia  
Architect: Southbrook, Russia  
Area: 20,000 sqm  
Year: 2010
APARTMENTS BLOK 13

Location: Ski Resort Kopaonik, Serbia
Client: Elkoms Ltd, Serbia
Area: 700sqm
Year: 2010

HOTEL YEKATERINBURG

Location: Yekaterinburg, Russia
Client: CITY FOX, Belgrade
Area: 25,000sqm
Year: 2011/12
APART HOTEL “PANORAMA”

Location................................................. Anapa, Russia
Architect.................................................. Adal, Slovenia
Area.......................................................... 50,000sqm
Year........................................................... 2010
SKI RESORT MANGEROCK-HOTEL

Location.........................Mangerock, Russia
Client............................ADC BIRO ltd, Serbia
Area.....................................5,400sqm
Year.......................................2008

SKI RESORT MANGEROCK-SERVICE CENTER

Location..............................Mangerock, Russia
Client.................................ADC BIRO ltd, Gabon
Area....................................16,000sqm
Year.......................................2008
Location.................................Belgrade, Serbia
Client......................................Gedeon, Serbia
Area........................................5.000sqm
Year.........................................2010

Location........................................Belgrade, Serbia
Client.........................................Vemex ltd, Gabon
Area..........................................1.400sqm
Year...........................................2009
Location: Vojislava Illica Street, Serbia
Client: Stibing Ltd, Serbia
Area: 3,000 sqm
Year: 2008

Location: Belgrade, Serbia
Client: Elkom Ltd, Gabon
Area: 350 sqm
Year: 2007
RESIDENTIAL+ OFFICES

Location........................................Belgrade, Serbia
Client..............................................Eva Vanista & Partners, Serbia
Area.................................................7.100sqm
Year.................................................2010

Location........................................Zajecar, Serbia
Client..............................................Elkoms Ltd, Serbia
Area.................................................2000sqm
Year.................................................2011
KETHAB THEATRE

Location: Tehran, Iran
Client: Padiav Company, Iran
Area: 3,000 sqm
Year: 2010

KHAVARAN THEATRE

Location: Tehran, Iran
Client: DC4S Architects, Iran
Area: 10,000 sqm
Year: 2011
**MARINE CLUB**

**Location**..........................Doha, Qatar
**Client**..............................Aedas, U.A.E
**Area**.................................30,000sqm
**Year**.................................2008

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**MIXED USE DEVELOPMENT - “HARBOUR CITY”**

**Location**..........................Bratislava, Slovakia
**Client**..............................Foster+Partners, United Kingdom
**Area**.................................170,000sqm
**Year**.................................2008
BUSSINES CENTER “LIMITLESS”

Location: Dubai, U.A.E
Client: Aedas, U.A.E
Area: 14,000sqm
Year: 2008

MIXED USE DEVELOPMENT - “JUMEIRAH GARDEN CITY”

Location: Dubai, U.A.E
Client: Aedas, U.A.E
Area: 170,000sqm
Year: 2008
Location.............................Abu Dhabi, U.A.E
Client......................Foster+Partners, United Kingdom
Area........................................700,000sqm
Year.............................................2008
ZIRA CENTER (HOTEL+RETAIL+OFFICES)

Location........................................Belgrade, Serbia
Client........................................Volume 3, United Kingdom
Area..............................................40,000sqm
Year.................................................2007

SHOPPING MALL “USCE”

Location........................................Belgrade, Serbia
Client........................................ARCVS, Serbia
Area..............................................130,000sqm
Year.................................................2008
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