



**Zameranie výskumu na Stavebnej fakulte
Technickej univerzity v Košiciach
v oblasti obnoviteľných zdrojov energií
a energeticky úsporných stavieb**



Riešené projekty

OPVaV

Architektonické, konštrukčné, technologické a ekonomické aspekty navrhovania energeticky efektívnych budov.

APVV

**Centrum výskumu energetickej náročnosti budov
Energetická certifikácia na Slovensku a v Českej republike
Energetická certifikácia na Slovensku a v Českej republike v
prostredí EÚ pre oblasť vykurovania a prípravy teplej vody**

VEGA

**Inteligentné budovy pre administratívu a súvisiace indoor
technológie pri využití obnoviteľných zdrojov energie**



Centrá excelentného výskumu ...

Centrum excelentného integrovaného výskumu progresívnych stavebných konštrukcií, materiálov a technológií (SvF TUKE)

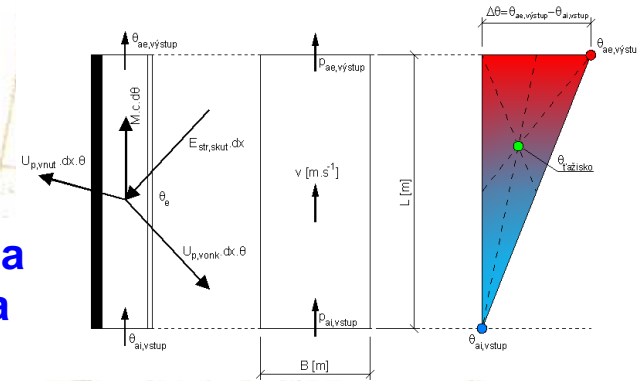
Centrum výskumu ekonomiky obnoviteľných zdrojov, energie a distribučných sústav (SvF TUKE, STUBA, HONORS, a.s.,)

Centrum efektívnosti zachytávania a využívania dažďových vôd v procese energetickej náročnosti (SvF TUKE, IN AQUA Košice,)

Zameranie výskumu na Stavebnej fakulte TUKE

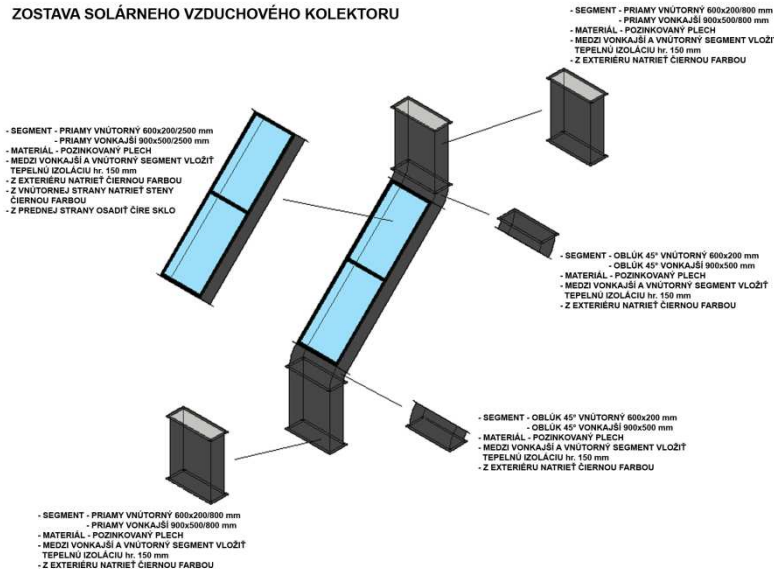
Vývoj solárneho komína pre podporu prirodzeného vetrania budov

Výskum je zameraný na návrh konštrukčného riešenia solárneho komína pre podporu prirodzeného vetrania budov na základe teoretického matematicko – fyzikálneho modelu s predikciou slnečného žiarenia využitím aproximačnej analytickej metódy.

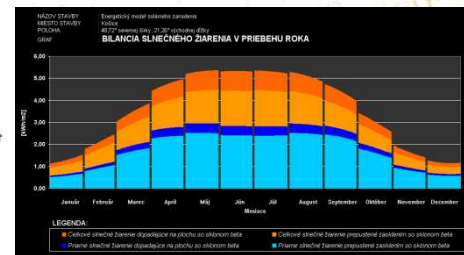


Aproximovaný lineárny priebeh vzostupu teploty v solárnom komíne

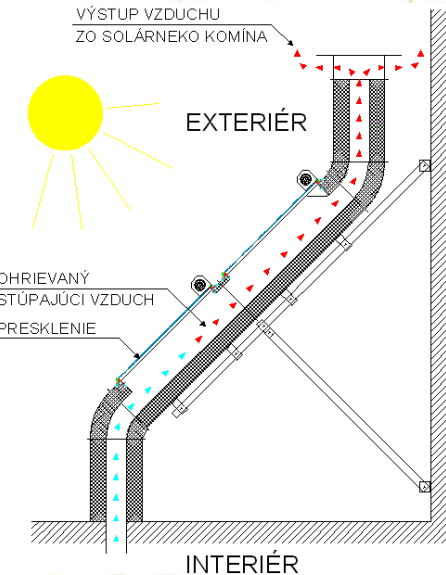
ZOSTAVA SOLÁRNEHO VZDUCHOVÉHO KOLEKTORU



3D riešenie solárneho komína



Predikcia slnečného žiarenia



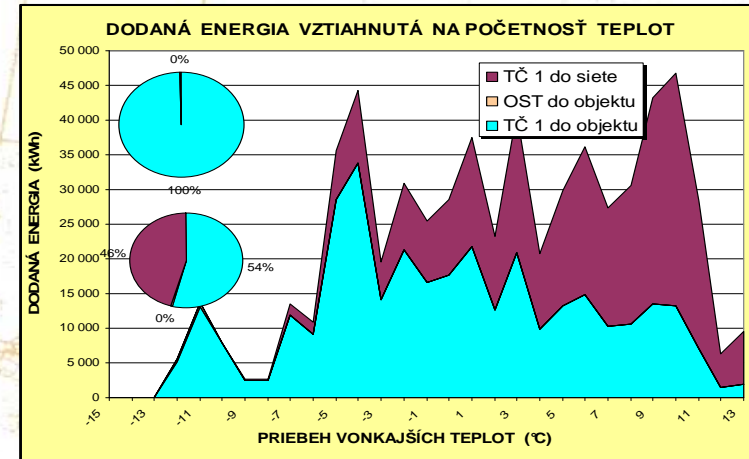
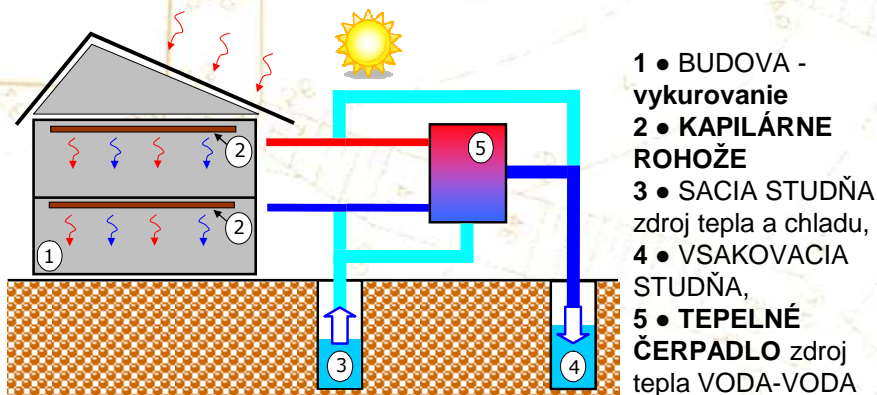
Priečný rez solárnym komínom

Zameranie výskumu na Stavebnej fakulte TUKE

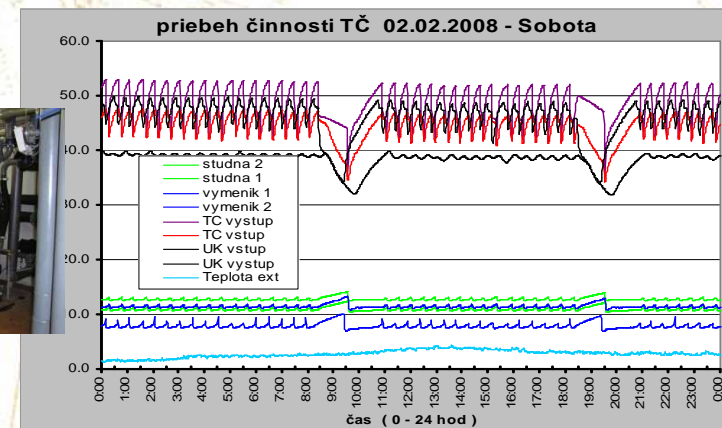
Obnoviteľné zdroje energií pre navrhovanie inteligentných budov s nízkou úrovňou emisií

Výskum synergického efektu moderných technológií výroby a distribúcie tepla s cieľom nahradiť energiu získanú zo spaľovania fosílnych palív energiou z obnoviteľných zdrojov, ktorá s úpravou sústav vykurovania a chladenia v budovách zabezpečí požadované mikroklimatické podmienky vnútorného prostredia s využitím dynamiky uskladnenej energie v stavebnej konštrukcii.

Schéma navrhovaného spôsobu zásobovania teplom



Pribeh tepelných strát objektu a výkonu tepelného čerpadla



Pribeh nameraných hodnôt pri prevádzke vykurovania tepelným čerpadlom



Th10T1 - 682



ARCHITECTURE - DESIGN - ENERGY EVALUATION OF A PASSIVE HOUSE IN SLOVAKIAN CLIMATE CONDITIONS

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SLOVAKIA
www.svf.tuke.sk

INDOOR AIR 2008

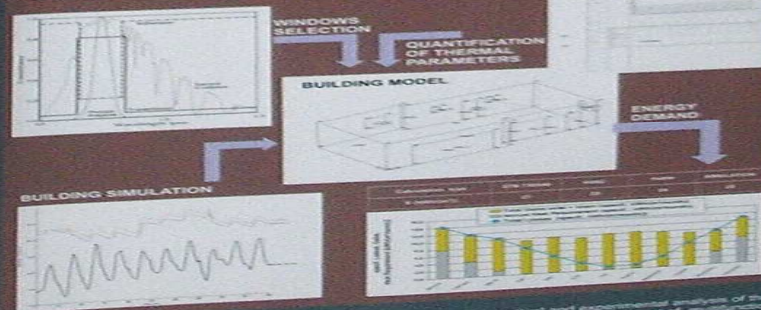


PROCESS OF ARCHITECTURAL DESIGN

SUBJECT OF RESEARCH

The developed project shall serve as a reference building for future purposes, which will be possible to visit and to oversee the operation processes. The entire process has to be controlling and therefore the following research areas were selected, in order to confirm the correctness of the accession road.

- Contact of foundations and upper constructions, ground floor and thermal flow
- Quantification of thermo-optical parameters of the door and windows
- Quantification of thermal parameters of the envelope
- Proposition of the construction detail
- Energy balance of the building according national standards
- Energy simulation of the building



TEAM

Dr. Martin Lopusniak

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PRESENT STATE

The presented project continues over to its second part. The building's realization with doing all the needed tests (blower door test, thermograph) will be the content of the second part. The project partners will be invited and they will control the right application of their products. All progresses will be according to the detail charted for the next presentation as well as for the training of construction workers. The end of all substantial building parts including complete HVAC system installation is expected in the end 2008. The finished works should be realized during winter months so that in the spring of 2009 it would be possible to start up the complete operation. The third and final part will be oriented towards the carrying out of short-time-lasting and long-time-lasting measures in situ. The time-lasting results will be measured with the calculation results. The conclusions obtained should be applicable for the future development of house constructions with low energy demands.

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prof. Ing. arch., PhD., Ing. arch.



PROJECT PARTNERS



ACKNOWLEDGEMENT
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