Middle East Technical University
METU Ankara, Turkey

International Council for Research and Innovation in Building and Construction

1st International CIB Endorsed METU Postgraduate Conference

"Built Environment and Information Technologies"

13th February 2006

Adriano Propersi
Dipartimento Best,
Via Ponzio, 31 20133
Milan
ITALY

Dear Adriano Propersi,

1st International CIB Endorsed METU Postgraduate Conference, 16-18 March 2006
MIDDLE EAST TECHNICAL UNIVERSITY (METU)

I wish to confirm acceptance of your paper No.71, entitled *"The Relationships Between Parties In Project Financing Transactions: Contractual, Communicational And Evaluation Issues"* as an oral presentation at the above conference.

Yours Faithfully,

Dr. Selahattin Önür, Assoc. Prof.
Chairperson
METU Department of Architecture

Middle East Technical University,
Faculty of Architecture

1st International CIB Endorsed METU Postgraduate
Conference (PGRC 06)
"Built Environment and Information Technologies"
16-18 March 2006
Ankara, Turkey

International Council for
Research and Innovation in
Building and Construction

FULL PAPER REVIEW FORM

SECTION 1: EVALUATION OF THE REFEREE

PGRC 06 PAPER REFERENCE NUMBER: 71

TITLE OF THE PAPER: The relationships between parties in project finance transactions ...

*Please tick (X) the suitable cell indicating **GOOD, FAIR** or **POOR** as an answer*

	In terms of...	GOOD	FAIR	POOR
1. TITLE	its accordance with the purpose and content of the study	x		
2. ABSTRACT	content and structure	x		
3. SUBJECT	its relevance to the conference themes	x		
4. INTRODUCTION	clarity of the stated purpose	x		
5. SUBJECT & METHODOLOGY	significance of the subject and validity of the methodology		x	
6. ILLUSTRATIONS, FIGURES, TABLES	appropriateness	n/a		
7. ENGLISH	clarity of expression and mastery of English	x		
8. STRUCTURE	conciseness		x	
9. CONCLUSIONS	validity of their supports		x	
10. KEYWORDS	appropriateness			x

Which topic of the conference do you think that the paper address? *(Please see the attached announcement for the conference themes)* ***Legal and Procurement Practices***

SECTION 2 : DECISION OF THE REFEREE

I recommend the points described in section 3 should be provided. According to my assesment depending on the criteria defined in section 1, the paper should be:

Please tick (x) the most suitable one	
Accepted as a paper as it stands	
Accepted as a paper with minor changes	X
Accepted as a paper only if the points described in section 3 are provided	
Accepted as a poster	
Rejected	

SECTION 3: NOTES OF THE REFEREE

Could you please keep your comments to the authors within the area left below and do not attach any further page. Thank you very much in advance.

An interesting and informative paper which has seen the author(s) note their views – some o which are critical and challenging. This should stimulated debate during the conference.

This paper,however, lack enough supportive and authoritative references in places, especially where bold statements have been made. More supportive literature is needed in these instances. For example, in the early part of the paper (1 –Premise). It was asserted that 30 and 40% of public funds are finance by private finance in UK and France. Where is this date from? A list of said refernces appear at the end of the paper, most of which were not cited in the main paper. These are indeed not references but Bibliography. This should be addressed. There is also a need for consistency in the style of referencing. The paper should also have KEYWORDS

Minor amendments neededin the paper.

THE RELATIONSHIPS BETWEEN PARTIES IN PROJECT FINANCING TRANSACTIONS: CONTRACTUAL, COMMUNICATIONAL AND EVALUATION ISSUES

Prof. Adriano Propersi, Politecnico di Milano
Seline Gundes Gressel, Phd Student, Politecnico di Milano

Abstract

In global markets there is a considerable growth in the interest in project finance as a tool for the provision of major projects. These projects involve highly complex contractual and organizational arrangements in potential problems may lead to failures, economical delusions or contractual disputes. These problems have to be identified, evaluated and solved before the project is undertaken.
This study investigates the relationships between different parties (construction companies, lenders, government and other public authorities, suppliers, engineers and other parties) involved in a project finance transaction, highlighting contractual, economical, organizational and communicational aspects in order to ensure that the project is economically viable, the relationships among participants are optimised, and projects are implemented in the interest of the public.
From the point of view of the research methodology used in this paper, this study has been written using the research methodology of the analysis of cases. In particular, the authors have analyzed many international cases, and in particular, the Turkish case of Birecik Dom and Hydroelectric Power Plant Project. The research methodology is described in the paragraph 3.

Key words: project finance technique, contracts, organisational structures, risks, commercial and financial aspects

1. Premise

In the last years, not only in Europe, we have seen a great debate about the financing of public constructions, trough the participation of private funds: this debate has produced new operating forms of collaboration between public bodies and private sources, to carry on big public work, called project financing techniques.
The limited public resources has obliged public bodies to involve, in a more systematic way, private funds in the construction process of many public works. In the last period, the project financing techniques are used more and more in other countries, to carry on complex and relevant public works.
Anyway, the expansion of the project financing techniques, in many countries, has been very difficult, for different reasons:

- the burochratic approach of the public bodies, which are not able to approach in a new dimension the private bodies;
- the limited size of the Italian building corporations;
- the low level of quality of the projects;
- the difficulty of the traditional bank system in investing funds in project financing initiatives. [1]

All these weak points, which are changing in a favourable direction, have reduce the development of the project financing initiatives, even the favourable recent legislations. But, we have to say that at the moment, we are living in a time of much more favourable preconditions for the growth of the project financing initiatives.
In this paper we want to analyze some critical aspects of the project financing initiatives, to show some important preconditions to improve these techniques.
In particular, we want to analyze the contractual problems related to project financing initiatives which arise among the different partners who participate to these complex activities (construction corporations, public bodies, financiers, engineering corporations, etc.). These partners, in many cases, constitute consortium or joint venture initiatives, to reduce their reciprocal risks of misalignment of interests.
The paper analyze the contractual and economic aspects of the project financing initiatives, which can be a great cause of the crisis of the project and of its construction.
As we have already said, project financing initiatives, in many cases, are carried on in the form of consortiums or joint venture, that is juridical forms which have the positive aspects to associate different entities and corporations which remain independent, permitting their integration to solve together relevant problems, with less costs. The consortium doesn't change

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[1] See PROPERSI, 2001, Le imprese edili, Il Sole 24 Ore Libri, ROSS.; "The capital asset pricing model, short sales restrictions and related issues", 1976-1977, in Journal of Finance; SHARPE, 1963 , "A simplified model for portfolio analisys", in Management and Science.

the level of economical, managerial and juridical autonomy of the single corporations, but drives all these subjects toward the common goals indicated by the consortium.
This form is completely different from the traditional group of corporations, where the different enterprises are formally autonomous, but they are submitted to the strategy indicated by the holding.
In project financing initiatives, the form of the consortium, or equivalents forms, are very usual, because they permit to reach the final goal, without compromising the level of independence and operating autonomy of the single corporations. This kind of flexibility is very appreciate by the corporations which have the possibility to reach the final goal, reducing the impact of the correspondent costs, which, on the contrary, are very high in case of merger or acquisition transactions.
In the sectors of constructions, the forms of consortium, ore equivalents, are very useful because they permit to the construction corporation to carry on complex initiatives, not possible for the single corporation alone. This is the reason, for the corporations involved in the single initiative, of the need to identify good, efficient and effective agreements able to guarantee the achievement of the final goal. [2]
In the following pages we will analyze the peculiar contractual problems related to the project financing initiatives and the relevance of the correspondent economic aspects.

2. The research methodology

From the point of view of the research methodology used in this paper, this study has been written using the research methodology of the analysis of cases.
The authors have analyzed the following international cases:

- BP Amoco;
- Australian Japan Cable;
- Poland's A2 Motorway;
- Petrolera Zuata;
- Chad Cameroon;
- Calpine Corporation;
- Iridium LLC;
- Bulong Nickel Mine

and they have studied, in particular, the *Turkish case of Birecik Dam and Hydroelectric Power Plant Project.*

See ANTHONY RN, 1965, 1967, Sistemi di pianificazione e controllo, Etas; ANTHONY RN, 1970, Il controllo dei costi operativi, F. Angeli; ANTHONY RN,1969, Contabilità per la direzione, Etas.

The Birecik Dam and Hydroelectric Power Plant is the first mayor hydroelectric power plant realised on a BOT bases in Turkey. Birecik Power Plant comprises 6 units of 112 MW nominal capacity and the purpose is to provide power generation and irrigation.

3. The peculiar aspects of the relationships among the different partners of project financing initiatives

The peculiar aspects of the joint venture relationships (not only in Italy), which, in many cases are used in project financing initiatives, can be represented as follow [3]:

- the achievement of a precise shared purpose of economic nature (called business common purpose), which is possible in order to the common interests of the partners (called community of interests or joint interests);
- the presence of a single business activity or a specific project which represents the object of the relationship among different partners (called single transaction or specific venture). This aspect, anyway, is not, anymore, an essential character of these operating models which manage, more and more, durable relevant transactions;
- each, associate partner brings money, goods, know-how, technological competences or skills or other services to favour the start up of the joint initiative. In any case, the partners must bring a certain amount of money to constitute the common fund, important to finance the ordinary expenses. It is important that the agreements signed by the different partners contain the duty of making further contributions to the common fund, when necessary, in proportion of the single percentage of participation, and also, the powers of controls that the single partner has on the common fund, and finally, the criterions of distribution of the same, at the end of the life of the partnership;
- the right of the partners to obtain the profits deriving from the specific joint initiative (called sharing of profits) and also the duty to support the eventual losses;

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[3] See CIPE, 2002, La valutazione della convenienza economico-finanziaria nella realizzazione e gestione degli investimenti pubblici , con il ricorso alla finanza privata; GUATRI, 1943, I costi di azienda, Giuffrè; MODIGLIANI e MILLER, 1958, "The cost of capital, corporation finance and the theory of investment", in American Economic Review ; PROPERSI, 2001, Le imprese edili, , Il Sole 24 Ore Libri; ROSS., "The capital asset pricing model, short sales restrictions and related issues", 1976-1977, in Journal of Finance.

- the power of a specific partner to operate on behalf of the entire group of partners: this partner is called leader, or sponsor, or prime contractor and it has the function of coordinating the numerous activities carried on by the group of partners and signing the contracts with third parties. Usually, the leader is the corporation which has the nationality in the state where the investment is located or the activities are carried to render easier the contacts with the correspondent local authorities. The leader has the power to present the common offer and also the correspondent power of signing the contract on behalf of the entire group of partners;
- the exclusion, from an internal point of view, of the reciprocal illimited and solidal responsibility of the partners for the execution of the all activities indicated in the contract: the single partner has the responsibility only in order to its correspondents duties and not for the duties of the entire group of partners. This is true if we consider an internal perspective, but, on the contrary, toward third parties each partner has an illimited and solidal responsibility;
- the presence of a formal organizational structure, where the single partner has a correspondent power of control and management on the common fund, trough the constitution of management and control bodies which have specific powers and duties of external transparency and reporting. The management body has a consultative role for the leader but in many cases, it is also the body who manage the numerous activities important to reach the final goal;
- the presence of particular dispositions which permit the resolution of internal conflicts among the partners. In fact the joint venture initiatives are base on the consensus, and for this reason, each conflict must be solved very soon. This is why this contractual disposition for the solution of potential conflicts are very important.

In particular, the empirical evidence considered in this paper shows that for project financing initiatives, the most important contractual dispositions must contain the following critical aspects:

- identifying the most appropriate juridical form for the partnership and the most appropriate national legislation;
- indicating the name, the legal and administrative headquarter, the goal and the time of the partnership;
- identifying the reciprocal duties and rights of the partners [4];

[4] See LINTNER, 1969, "The aggregation of investors diverse judgments and preferences in purely competitive security market", , in Journal of financial and quantitative analysis; LINTNER, 1965, "The evaluation of risk assets and the selection of risky investments in stock portofolios and capital budget", in Review of economics and statistics; SHARPE, 1963 , "A simplified model for portfolio analisys", in

- identifying what the partners must bring in terms of money, goods, services, etc;
- identifying the form and the entity of the remuneration of the partners;
- identifying the rights and the technical and economic responsibilities of each part;
- identifying the eventual duties of the members to carry on collateral services;
- identifying a collegial management and administrative body;
- identifying the composition of the board of trustees and representative mechanisms;
- identifying a control body and correspondent control mechanisms and sanctions for the members;
- identifying the duties of financial reporting;
- identifying the rules of the distribution of profits and loss among the different members;
- identifying the rules about the solution of conflicts among partners;
- identifying the rules about the distribution of the final assets of the partnership, at the end of the same.

Management and Science; ROSS., "The capital asset pricing model, short sales restrictions and related issues", 1976-1977, in Journal of Finance.

4. The organizational aspects

The organizational aspects of the "joint-ventures" models for the project financing initiatives must be considered and evaluated in order to the specific agreement signed among the partners and in order to the specific final goal.
In particular, the analysis of the cases indicated at the beginning of the paper shows that we can have different organizational needs:

- in order to the duties of associates;
- in order to the eventual duty of members of making further contributions;
- in order to the duties of making or not making specific transactions for the single member.

As we have already said, the peculiar aspect of the joint venture initiatives is putting together different corporations over a common complex activity. In particular we can have to kinds of member-corporations: member corporations which have the structure and the resources to remain independent and autonomous from the leader-corporation and member-corporations which are completely managed by the leader-corporation which is much stronger than the other members. Then, we have many intermediate cases.

In particular, the organizational politics must follow and reflect the agreement signed by the different parts, and they must reflect the following aspects:

- the definition of the single bodies and correspondent duties and responsibilities;
- the definition of the personnel needed;
- the definition of decisional, execution and control procedures;
- the definition of the organizational structure (gerarhic, functional, based on projects, etc.). [5]

In any case, it is the agreement signed by parties which defines the organizational structure in terms of distribution of tasks, duties, responsibilities, risks.
The organizational structure of joint venture initiatives can be also formally equal to the organizational structure of business corporations. In many

[5] See CIPE, 2002, La valutazione della convenienza economico-finanziaria nella realizzazione e gestione degli investimenti pubblici , con il ricorso alla finanza privata; GUATRI, 1943, I costi di azienda, Giuffrè; MODIGLIANI e MILLER, 1958, "The cost of capital, corporation finance and the theory of investment", in American Economic Review ; PROPERSI, 2001, Le imprese edili, , Il Sole 24 Ore Libri; ROSS., "The capital asset pricing model, short sales restrictions and related issues", 1976-1977, in Journal of Finance.

cases, these structures are very similar, with the same bodies (the assembly of the associates, the board of trustees, the control body), but, in other many cases, we can see significant differences, in terms of the identification of further bodies as, for example, the project manager.
In any case, even if the organizational structure if formally equivalent to the structure of business corporations, it works following a completely different model, because different are the relationships existing among the partners.
In many cases, the relationships among the different bodies are regulated by specific dispositions. (usually reserved).
The presence of the project manager is a peculiar aspect of the joint venture used in project financing initiatives and he can be selected among the different partners. The project manager play a directional role and he has wide management responsibilities and powers, as a sort of CEO of a business corporation. In other cases, the project manager can play an important role of coordination of the members and of their duties.
The role of coordination is one of the most important aspect of these initiatives, and in many cases, this role is played by a specific body.
Also the control body used in these initiatives is different from the control body of the business corporations. In fact, this body can not make only accounting and formal controls, but it is more and more important making correct controls about the degree of respect of the duties of the single partners. These controls represent an important activity of the general manager of the joint venture and he can appoints specific controllers to do these controls (called "ispettori"). If the members don't respect the duties indicated in the agreement, they incur in the sanctions indicated by this important document.

5. How we can build a durable and efficient joint venture for project financing initiatives

We have not standard rules to build durable and efficient joint ventures for project financing initiatives. But anyway, we can indicate some important recommendations. The first one is the following: the general agreement among partners must be define very carefully.
If the agreement is not a good agreement, it is better stopping the definition of the joint venture.
In particular, the analysis of the cases considered in this papers shows that we can indicate the following rules to build a durable and efficient joint venture:

- remember that good agreements are the result of a negotiation of different and, in some cases, conflicting interest of the partners;
- remember that different parts must speak the "same language";
- remember that the different parts who participate to the negotiations must have the correspondent representative powers;
- be careful to the juridical aspects;
- remember that it is fundamental to define, in advance, the obliges of participation of each part;
- define very carefully the aspects of management of the "joint venture" and the mechanisms of distribution of the powers among the different participants;
- define, in advance, the source of financing of the initiative;
- define, in advance the criterions of distribution of profit and losses among the different participants;
- define in advance the mechanisms of control of the entire joint venture.

6. Closing remarks

The empirical evidence considered in this paper shows that when we carry on great works using the project financing technique, the construction aspects are important, but at the same time, also financial and economic evaluations related to the plans of works and to the plans of revenues plays a fundamental role.

In this paper, we have analyzed the risks related to the need of making good juridical agreements among the different parties involved in the single initiative.

The analysis of cases shows that in the project financing initiatives the juridical and organizational aspects must be studied very well, otherwise it is normal that the initiative will produce relevant economic and technical mistakes and damages. This is the direct consequence of the complexity of these kinds of transactions.

In this paper we have only underlined this aspect, which must be studied and solved using the maximum level of care, with reference to the specific case.

References

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Studio Propersi

Da: "METU CIB Student Chapter" <pgrc06@metu.edu.tr>
A: <pgrc06@metu.edu.tr>
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Oggetto: CONFERENCE PROGRAM

Dear Authors,

1ST INTERNATIONAL CIB ENDORSED METU POSTGRADUATE CONFERENCE

Please find the attached conference program.

We look forward to meeting you next week.

Yours Faithfully,
Simge Andolsun
Scientific Secretariat

METU CIB Student Chapter

08:00- 09:30	REGISTRATION	09:45- 10:00	CIB REPRESENTATIVE
09:30- 09:35	START AND INTRODUCTION	10:00- 10:45	KEYNOTE SPEAKER
09:35- 09:45	WELCOME – CONFERENCE CHAIR	10:45- 11:00	COFFEE BREAK

	ENVIRONMENT- SUSTAINABILITY- PERFORMANCE ASSESSMENT		DESIGN: THEORY & PLANNING
11:00- 11:15	**RELATION BETWEEN DESIGN REQUIREMENTS AND BUILDING PERFORMANCE SIMULATION** Gülsu Ulukavak Harputlugil, Christina J. Hopfe, Christian Struck, Jan Hensen *Gazi University, TURKEY &* *Technische Universiteit Eindhoven, NETHERLANDS*	11:00- 11:15	**THE APPLICATION OF SYSTEMS ENGINEERING ON THE BUILDING DESIGN PROCESS** Azzedine Yahiaoui, Gülsu Ulukavak Harputlugil, A. E. K. Sahroui *Center for Building and Systems, NETHERLANDS & Gazi University, TURKEY & LAAS- CNRS, FRANCE*
11:15- 11:30	**THE PARAMETERS EFFECT ON SUSTAINABLE BUILT ENVIRONMENT DESIGN** M. Tolga Akbulut, Dilek Ekşi Akbulut, Gül Koçlar Oral *Yıldız Technical University, TURKEY & İstanbul Technical University, TURKEY*	11:15- 11:30	**DEVELOPING DESIGN STRATEGIES FOR UNIVERSALLY DESIGNED BUILT ENVIRONMENTS IN THE 21ST CENTURY** Yasemin Afacan *Bilkent University, TURKEY*
11:30- 11:45	**COMPARATIVE ANALYSIS OF ENVIRONMENTAL PRODUCT DECLARATION (EPD) SCHEMES: STARTING POINTS FOR A PROPOSAL OF HARMONIZATION** *Arzuhan Burcu Aydın, Gülser Çelebi,* *Gazi University, TURKEY*	11:30- 11:45	**DESIGN EFFICIENCY IN INPATIENT FACILITIES OF HOSPITALS** Z. Tuğçe Kazanasmaz *METU, TURKEY*
11:45- 12:00	**ARCHITECTURE AND ENVIRONMENT ECOLOGICAL BUILDING DESIGN RECOMMANDATIONS FOR ONE FAMILY PASSIVE HOUSE DESIGN** Seda Tönük, Kutlu Sevinç Kayıhan *Yıldız Technical University, TURKEY & Gebze Institute of Technology, TURKEY*	11:45- 12:00	**HEALING DESIGN: A HOLISTIC APPROACH TO SOCIAL INTERACTION IN PEDIATRIC INTENSIVE CARE UNITS IN THE UNITED STATES AND TURKEY** Hilal Özcan *WHR Arhitects, Inc., USA*
12:00- 12:15	**STADIUM CONSTRUCTION AND SUSTAINABILITY: THE REVIEW OF MEGA-EVENT STADIUMS (1980-2012)** Sertaç Erten, Sena Özfiliz *METU & İstanbul Technical University, TURKEY*	12:00- 12:15	**ARCHITECTURAL DESIGN BASED ON CLIMATIC DATA** Aslı Pınar Biket *Yıldız Technical University, TURKEY*
12:15- 12:30	**BUILDING A HOUSE OUT OF TRASH: A CANADIAN EXPERIMENT** Leila-Marie Farah *McGill University, CANADA*	12:15- 12:30	**PROPOSAL FOR MODULAR FACADE DESIGN** Mine Şenyürük, Murat Aygün *İstanbul Technical University, TURKEY*
12:30- 13:00	DISCUSSIONS	12:30- 13:45	DISCUSSIONS
13:00- 13:45	LUNCH		

	ENVIRONMENT- SUSTAINABILITY- PERFORMANCE ASSESSMENT		DESIGN: THEORY & PLANNING
13:45- 14:00	**GIS BASED RISK ASSESSMENT: A CASE STUDY OF İZMİR METROPOLITAN AREA** Çiğdem Tarhan, Ömür Saygın *İzmir Institute of Technology, TURKEY*	13:45- 14:00	**BLURRING THE BOUNDARIES 'RELATIONAL SPACE' IN WORKS OF DILLER + SCOFIDIO** Nalan Bahçekapılı, Pınar Artukoğlu *Yeditepe University & Kadir Has University, TURKEY*
14:00- 14:15	**STUDY OF POSSIBILITIES OF INCORPORATION OF THE PERIPHERAL COUNTRYSIDE FOR THE CONSTRUCTION OF THE SUSTAINABLE CITY. CASE OF APPLICATION GREEN EMBROIDERS OF THE CITY OF LIMA. PERU.** Jose Luis Chong Chong *Ricardo Palma University, PERU*	14:00- 14:15	**THE EFFECTS OF FUTURISM ON SCIENCE FICTION CINEMA** Erdal Devrim Aydın, Togan Tong, S. Emre Pusat *Yıldız Technical University, TURKEY*
14:15- 14:30	**EFFECTIVE APPROACH TO ACHIEVE SUSTAINABLE URBAN RENEWAL IN DENSELY POPULATED CITIES** Grace Lee, Edwin Chan *The Hong Kong Polytechnic University, HONG KONG*	14:15- 14:30	**AN ARISTOTELIST VIEW TO THE "ART" OF COMPUTER- AIDED PHOTO- REAL MODELING** Erdal Devrim Aydın, Togan Tong, S. Emre Pusat *Yıldız Technical University, TURKEY*
14:30- 14:45	**PRINCIPALS OF DESIGNING RIVER-VALLEYS AS GREEN CORRIDORS IN MODERN CITIES** Sarah Fattahi, Saeed Akbari, Kaveh Fattahi *Shahid Behesti University, IRAN*	14:30- 14:45	**A PRAGMATIST RECONSTRUCTION OF LAKATOS' SRP IN ORDER TO STUDY THE DEVELOPING TACIT KNOWLEDGE IN ARCHITECTURAL PRAXIS** Ece Kumkale Biçkes *Gazi University, TURKEY*
14:45- 15:00	DISCUSSIONS & COFFEE	14:45- 15:00	DISCUSSIONS & COFFEE

ENVIRONMENT- SUSTAINABILITY- PERFORMANCE ASSESSMENT		DESIGN: THEORY & PLANNING	
15:00- 15:15	**A STUDY ON THE COMPATIBILITY OF CONTEMPORARY NEIGHBORING PLASTERS WITH AUTOCLAVED AERATED CONCRETE (AAC)** Simge Andolsun, Ayşe Tavukçuoğlu, Emine Caner Saltık, Arda Düzgüneş *METU, TURKEY*	15:00- 15:15	**SAFETY CONCERNS ISSUES FOR PARK USERS, CASE STUDY IN ZEYTİNBURNU WATERFRONT PARK IN İSTANBUL** Gökçen Firdevs Yücel *İstanbul Technical University, TURKEY*
15:15- 15:30	**THE EXAMINATION OF WATER VAPOUR DIFFUSION AND CONDENSATION ON THE EXTERNAL WALLS** Ürün Biçer Özkurt *Yıldız Technical University, TURKEY*	15:15- 15:30	**SPATIAL EVALUATION OF URBAN FORM WITH RESPECT TO BUILDING DENSITY IN İSTANBUL** Burcin Yazgi, Vedia Dökmeci *İstanbul Technical University, TURKEY*
15:30- 15:45	**CONSTRUCTIONAL CLASSIFICATION OF CONTINUOUSLY AND POINT FIXED CURTAIN WALL SYSTEMS** Yusuf İlhan, Murat Aygün *İstanbul Technical University, TURKEY*	15:30- 15:45	**COMPETITIVENESS AS A CHANGING FACTOR OF TOURISM BUILT ENVIRONMENT- CASE OF HOTELS IN TURKEY** Hilal Erkuş Öztürk *METU, TURKEY*
15:45- 16:00	**EVALUATION OF THE SOUND INSULATION OF BUILDING FACADES: A SAMPLE OF TAKSİM – BEŞİKTAŞ; İSTANBUL** Ayçe Döşemecile *İzmir Institute of Technology, TURKEY*	15:45- 16:00	**BUCHAREST - RISK AND URBAN STRATEGY** Cristina Olga Gociman *University of Architecture and Urbanism, ROMANIA*
16:00- 16:15	**PASSIVE SOLAR CONTROL- A METHODOLGY FOR THE PROMOTION OF ENVIRONMENTAL CONSCIOUS DESIGN OF ANKARA AIRPORT** Ayşe Neşen Sürmeli, Melis Gürbüzbalaban, Uğur Gürşat Yalçıner *METU & Yalçıner Consultancy and Foreign Trade Ltd., TURKEY*	16:00- 16:15	**SUSTAINABLE PROGRAMMING AND DESIGN OF LEARNING URBAN LANDSCAPES WITHIN THE CONTEXT OF COMMUNITY: THE CASE OF BAM, IRAN** Aida Banihashemi Jahromi *Child- Friendly Cities, UNICEF, IRAN*
		16:15- 16:30	**CHANGING PARADIGMS OF EVOLVING CITY CENTRES** Debabardhan Upadhyaya *University of Sheffield, UK*
16:15- 16:40	DISCUSSIONS & COFFEE	16:15- 16:40	DISCUSSIONS & COFFEE

POSTERS	
16:45- 16:55	**FROM ABSTRACT TO CONCRETE: VISUAL COMMUNICATION IN DESIGN** Özlem Şenyiğit, Çiğdem Polatoğlu Baytın, N. Ferah Akıncı, Ayfer Aytuğ *Yıldız Technical University, TURKEY*
16:55- 17:05	**İZMİR AND SKYSCRAPERS** Malike Özsoy *Yaşar University, TURKEY*
17:05- 17:15	**INNOVATIVE MASONRY BUILDING SOLUTIONS FROM THE ARCHITECTURAL POINT OF VIEW FOR SMALL SCALE-CITIES IN TURKEY** Aslı Er Akan *METU, TURKEY*
17:15- 17:25	**INVESTIGATION THE URBAN IDENTITY KARMI (KARAMAN) AND ESENTEPE VILLAGES: FINDING OUT THE STRATEGIES FOR THE SUSTAINABILITY THE CULTURAL IDENTITY OF ESENTEPE VILLAGE** M. Selen Abbasoğlu, Kamil Güley *Cyprus International University, CYPRUS & Eastern Mediterranean University, CYPRUS*
17:20- 17:30	**PROBLEMS IN RECOVERY OF USED BUILDING MATERIALS** Fatma Zehra Çakıcı *METU, TURKEY*
17:30- 19:00	**WELCOME RECEPTION**

09:00- 09:15 REGISTRATION & COFFEE

09:15- 10:15 KEYNOTE SPEAKER

HALL A	HALL B
INFORMATION TECHNOLOGIES	**EDUCATION**
10:15- 10:30 **PROBLEMS OF INTUITION IN COMPUTER AIDED ARCHITECTURAL DESIGN** Ülkü Özten *METU, TURKEY*	10:15- 10:30 **EDUCATING ON CONSERVATION: THE GREEK EXPERIENCE IN PREPARING SPECIALISTS IN BUILT HERITAGE PRESERVATION AND ENHANCEMENT** Dimitrios Zygomalas *Aristotle University of Thessaloniki, GREECE*
10:30- 10:45 **SCIENCE AND TECHNOLOGY ORGANIZATIONS IN TURKEY** Zübeyde Özlem Parlak Biçer *Erciyes University, TURKEY*	10:30- 10:45 **INTEGRATING UNIVERSAL DESIGN INTO THE MAIN STREAM OF ARCHITECTURAL DESIGN EDUCATION** Yasemin Afacan *Bilkent University, TURKEY*
10:45- 11:00 **'SMART SURROUNDINGS': A NEW ERA FOR COMMUNICATION AND INFORMATION TECHNOLOGIES** Elvin Karana, Prabhu Kandachar *Delft University of Technology, NETHERLANDS*	10:45- 11:00 **CREATIVE THINKING IN ARCHITECTURAL DESIGN EDUCATION** Ayla Ayyıldız Potur, Ömür Barkul *Yıldız Technical University, TURKEY*
11:00- 11:15 **A 3D COMMUNICATION MODEL FOR THE CONSTRUCTION SUPPLY CHAIN – A ROUTE TO CONSTRUCTION INDUSTRY INTEGRATION** Qiang Du *University of Bath, UK*	11:00- 11:15 **THE BEGINNING OF FORMAL ARCHITECTURAL EDUCATION IN TURKEY AND THE PIONEER TURKISH WOMEN IN ARCHITECTURAL EDUCATION** Yekta Özgüven *Yıldız Technical University, TURKEY*
11:15- 11:30 **CYCLE INFORMATION: TOOLS FOR OPTIMIZATION KNOWLEDGE MANAGEMENT IN THE BUILDING PROCESS** Efrem Ropelato, Bruno Daniotti *Politecnico di Milano, ITALY*	11:15- 11:30 **ON THE RELEVANCE OF KARL POPPER'S EVOLUTIONARY EPISTEMOLOGY FOR ARCHITECTURAL EDUCATION** Hakan Anay *METU, Turkey*
11:30- 11:45 **THE ROLE OF INFORMATION AND COMMUNICATION TECHNOLOGIES IN THE PROCESS OF POST-DISASTER HOUSING RECONSTRUCTION** Berna Baradan *İzmir Institute of Technology, TURKEY*	11:30- 11:45 **STUDYING CORRELATES OF DESIGN STUDENTS' COMPUTER ATTITUDES** Şule Taşlı Pektaş *Bilkent University, TURKEY*
11:45- 12:00 DISCUSSIONS	11:45- 12:00 DISCUSSIONS
12:00- 13:00 LUNCH	
MANAGEMENT	**HISTORY & CULTURE & TRADITION**
13:00- 13:15 **THE BOOKLET OF THE BUILDING WHICH INSTRUMENT OF OPTIMUM CONDITIONS MANAGEMENT AND MAINTENANCE FOR BUILDINGS** Marco Cuomo *Milan Polytechnic, ITALY*	13:00- 13:15 **FACTORS INFLUENCING HOUSING PRICES IN REVITALIZING AREAS** Evren Ozus, Vedia Dökmeci *İstanbul Technical University, TURKEY*
13:15- 13:30 **COMPETITIVE MICRO ENVIRONMENT OF SMALL RESIDENTIAL BUILDING CONTRACTORS** Ela Öney Yazıcı, Emrah Acar *İstanbul Technical University, TURKEY*	13:15- 13:30 **A SOCIAL SURVEY FOR THE PUBLIC PARTICIPATION IN THE CONSERVATION OF HISTORICAL COMMERCIAL CENTER OF ADANA** Tuba Akar *METU, TURKEY*
13:30- 13:45 **A FRAMEWORK FOR MEASURING THE INTENSITY OF COMPETITION IN GENERAL CONTRACTOR MARKET** Kun-Hui Ye *The Hong Kong Polytechnic University, HONG KONG, P.R.CHINA*	13:30- 13:45 **IDENTIFYING USER PERCEPTIONS IN HISTORICAL SITES DEVELOPING A RESEARCH DESIGN IN THE CASE OF TARSUS** Meltem Uçar *METU, TURKEY*
13:45- 14:00 **THE RELATIONSHIPS BETWEEN PARTIES IN PROJECT FINANCING TRANSACTIONS: CONTRACTUAL, COMMUNICATIONAL AND EVALUATION ISSUES** Adriano Propersi, Seline Gundes Gressel *Polytecnico di Milano, ITALY*	13:45- 14:00 **ARCHITECTURAL HERITAGE OF LATE 19th CENTURY REFUGEE MOVEMENTS "PLANNED REFUGEE HOUSES": URBAN DEVELOPMENT OF REFUGEE HOUSES IN İZMIR (TURKEY)** Arzu Temizsoy *METU, TURKEY*
14:00- 14:30 DISCUSSIONS & COFFEE	14:00- 14:30 DISCUSSIONS & COFFEE

MANAGEMENT

14:30- 14:45 **PERFORMANCE MEASUREMENT OF RESEARCH AND DEVELOPMENT: A LITERATURE REVIEW**
Udayangani Kulatunga, Dilanthi Amaratunga, Richard Haigh
University of Salford, UK

14:45- 15:00 **INTERNATIONAL MARKET ENTRY DECISIONS: A KNOWLEDGE-BASED APPROACH**
Beliz Özorhon, İrem Dikmen, M. Talat Birgönül
METU, TURKEY

15:00- 15:15 **THE EFFECTS OF WELL-PREPARED CONTRACTS ON THE SUCCESS OF THE COMPANY**
Begüm Sertyeşilışık
METU, TURKEY

15:15- 15:30 **OBSTACLES OF TURKISH CONSTRUCTION WORKFORCE IN FOREIGN COUNTRIES**
Gökhan Arslan, Serkan Kıvrak
Anadolu University, TURKEY

15:30- 16:00 DISCUSSIONS & COFFEE

HISTORY & CULTURE & TRADITION

14:30- 14:45 **TRANSFORMATION OF HOUSE-TYPOLOGY IN THE ANCIENT PRIENE CITY**
Neslihan Kulözü, Melda Açmaz
METU, TURKEY

14:45- 15:00 **SEARCHING TRACES OF A DONOR: SAHIP ATA IN SELJUK ARCHITECTURE**
Çağla Caner, Gökçe Şimşek Kuran
METU, TURKEY

15:00- 15:15 **MODERN ARCHITECTURE AND TECHNOLOGY OF PEOPLE'S HOUSES**
Ayşe Durukan Kopuz
İstanbul Technical University, TURKEY

15:15- 15:30 **CHANGING RURAL CHARACTER RELATED TO URBAN GROWTH IN MUĞLA, KARABAĞLAR**
Feray Koca
METU, TURKEY

15:30- 15:45 **COMMUNITY-BASED ACTION MODEL FOR SKILLS COMPETENCIES IN THE PROCESS OF DELIVERING HOUSING MARKET RENEWAL**
Rozilah Kasim, Keith Alexander, John Hudson
University of Salford, UK

15:30- 16:00 DISCUSSIONS & COFFEE

POSTERS

15:45- 15:55 **THE URBAN SPRAWL AND MACROFORM DEVELOPMENT IN ANKARA: THE EMERGENCE OF NEW TOWN AND NEW CBD**
Duygu Kaçar, Feray Koca
METU, TURKEY

15:55- 16:05 **MATHEMATICS AS A TOOL TO EVALUATE BIOMIMETIC INSPIRATIONS: A STUDY ON SEASHELL MODELING**
Semra Arslan Selçuk
METU, TURKEY

16:05- 16:15 **THE EXAMINATION OF THE BUILDING SHELLS DUE TO THE SHOPPING SPACES**
Aslı Pınar Biket, Ürün Biçer Özkun
Yıldız Technical University, TURKEY

16:15- 16:25 **USE OF COMPUTERS IN GEOTECHNICAL ENGINEERING EDUCATION**
Erdal Çokça
METU, TURKEY

16:25- 16:35 **HAZARD SEISMIC STUDIES FOR THE ROMANIAN CAPITAL**
Stefan Florin Balan, Carmen Ortanza Cioflan, Boğdan Felix Apostol
National Institute of Research Development for Earth Physics, ROMANIA

16:35- 16:45 **ARCHITECTURAL LEGIBILITY IN ANCIENT PART OF SHIRAZ, IRAN (2500 YEARS OLD CITY)**
Farnaz Pakdel
Eastern Mediterranean University, NORTH CYPRUS

16:45- 17:00 **CLOSING SPEECH**

CLOSING DINNER