

Housing Research Center Purdue University

2004 Annual Report

A. Organization

The Purdue Housing Research Center is located in the Building Construction Management Program in the School of Technology. The Center activities are directed by Prof. Stephen Schuette as the Executive Director. This center works in conjunction with the Division of Construction Engineering & Management, School of Civil Engineering with Professor Makarand (Mark) Hastak serving as the Research Director for Manufactured Housing. Professor Joseph Orczyk and Mr. Mark Schauette, both from the Department of Building Construction Management, serve as Co-Research Directors for Re-Construction.

B. Activities

1. Housing Research Agenda Workshop (2003-2004), Funded by NSF-PATH
Principal Investigators: Dr. M. Syal (MSU), Dr. M. Hastak (Purdue) and Dr. M. Mullens (UCF)
2. Manufactured Housing Production Process Analysis and Facility Layout (2002-2005),
Funded by NSF-PATH
Principal Investigators: Dr. M. Hastak (Purdue) and Dr. M. Syal (MSU)
3. Joint U.S. – India Symposium on Urban Housing and Infrastructure (2004-2005), Proposal
submitted to NSF
Principal Investigators: Dr. M. Syal (MSU), Dr. M. Hastak (Purdue) and Dr. M. Mullens (UCF)
4. State of the Manufactured Housing Industry in Indiana (Update in progress)
Principal Investigator: Dr. M. Hastak (Purdue)
5. Financial Analysis of the Manufactured Housing Industry (Report in Preparation)
Principal Investigator: Dr. M. Hastak (Purdue)

C. Reports and Publications

Senghore, O., M. Hastak, T. S. Abdelhamid, A. AbuHammad, and M. G. Syal. (2004). "Production Process for Manufactured Housing." *Journal of Construction Engineering and Management*, ASCE, Vol. 130, No. 5, September/October 2004, pp. 708-718.

Abu Hammad, Ayman, Makarand Hastak, and Matt Syal. (2004). "Comparative Study of Manufactured Housing Production Systems." *ASCE Journal of Architectural Engineering*, Vol. 10, No. 4, December 2004, pp. 136-142.

Mehrotra, N., M. G. Syal, and M. Hastak. (2004). "Manufactured Housing Trends and Codes in Michigan." *The American Professional Constructor*, Journal of the American Institute of Constructors, AIC, St. Petersburg, FL. April, pp. 26-36.

Barriga, Edgar, Jae Jeong,* Makarand Hastak, and Matt Syal. (2004). "Material Requirement Planning for the Manufactured Housing Industry." Paper scheduled for publication in the *ASCE Journal of Architectural Engineering*.

Jae Jeong, Makarand Hastak, and Matt Syal. (2004). "Supply Chain Analysis and Modeling for the Manufactured Housing Industry." Paper approved for publication in the *ASCE Journal of Urban Planning and Development*.

M. Syal, M. Hastak, M. Mullens, S. Cramer, E. Burnett, T. Koebel, M. O'Brien, and C. Martin. (2004). "Housing Research Agenda for NSF-PATH." Paper approved for publication in the *ASCE Journal of Architectural Engineering*.

Barriga, Edgar, Jae Jeong, Makarand Hastak, and Matt Syal. (2005). "Material Control System for the Manufactured Housing Industry." Paper scheduled for publication in the April 2005 edition of the *ASCE Journal of Management in Engineering*.

Mehrotra, N., M. Syal, and M. Hastak. (2005). "Manufactured Housing Production Layout Design." Paper scheduled for publication in the March 2005 issue of the *ASCE Journal of Architectural Engineering*.

Banerjee, D., M. Syal, M. Hastak. (2004). "Material Flow Based Facility Layout Analysis of Manufactured Housing Production Plant." Paper submitted to the *ASCE Journal of Architectural Engineering*. (1st tier category)

Syal, M and Hastak, M. (2004). "Whole House Production: Integration of Factory-Built and Site-Built Construction," Proceedings of the NSF-PATH Housing Research Agenda Workshop, NSF and U.S. Department of HUD, Washington DC. (<http://www.pathnet.org/sp.asp?id=12201>)

Hastak, M. and Syal, M. (2004). "Building Process Optimization with Supply Chain Management in the Manufactured Housing Industry," Proceedings of the NSF-PATH Housing Research Agenda Workshop, NSF and U.S. Department of HUD, Washington DC. (<http://www.pathnet.org/sp.asp?id=12201>)

Syal, M., Hastak, M., and Mullens, M. (2004). "Housing Research Agenda: Summary Report," Proceedings of the NSF-PATH Housing Research Agenda Workshop, NSF and U.S. Department of HUD, Washington DC. (<http://www.pathnet.org/si.asp?id=1057>).

Mullens, M and Hastak, M. (2004). "Defining a National Housing Research Agenda: Construction Management and Production" *Proceedings of the NSF Housing Research Agenda Workshop*, Feb. 12-14, 2004, Orlando, FL. Eds. Syal, M., Hastak, M., and Mullens, M. Vol. 1, pp. Focus Group 1.

Hastak, M., Mullens, M., and Syal, M. (2004). "National Housing Research Agenda for Construction Management and Production" Submitted for presentation and publication in the refereed *Proceedings of the Construction Congress 2005*, San Diego, CA.

Syal, M., Hastak, M., Banerjee, D., Mehrotra, N., "Continuation Education Module – Manufactured Housing Facility Layout," NSF Project Report, MSU and Purdue, March 2004

Syal, M., Hastak, M., and Mullens, M. (August 2004). Final Report, NSF-PATH Housing Research Agenda, NSF and U.S. Department of HUD, Washington DC. (<http://www.pathnet.org/sp.asp?id=12201>)

D. Center of Re-Construction

A Center of Re-Construction is in the process of being established. On a broad basis the Center will work in the areas building rehabilitation as the result of disaster or natural deterioration.

E. NAHB Student Chapter

- 37 members
- Meetings are held each month with speakers, participation in the local chapter of NAHB, and fund raising activities to off set costs to travel to the national convention.
- Professor Dale Koehler is the faculty advisor