GEORGI IVANOV PETROV

Address: 2303 29th Avenue FL2
Astoria, NY 11102, USA

mobile:+1 646 338 6285

e-mail: georgi@gpetrov.com
georgi.petrov@som.com
gpetrov@gmail.com

LICENSES AND REGISTRATIONS

Registered Architect – New York
Registered Professional Engineer – New York, Michigan
LEED AP

AFFILIATIONS

Skidmore, Owings, & Merrill LLP – Senior Associate Principal
New York University – Adjunct Professor
Massachusetts Institute of Technology – Visiting Lecturer
Synthesis International – Partner/Engineer/Space Architect
American Institute of Architects [AIA] - Member
American Institute of Aeronautics and Astronautics [AIAA], Space Architecture Technical Committee - Member
International Association for Bridge and Structural Engineering [IABSE] - Member

EDUCATION

Master of Architecture - Massachusetts Institute of Technology, USA, January 2004
Master of Science in Civil Engineering - University of Illinois at Urbana – Champaign, USA, December 2000
Bachelor of Science in Architectural Studies - University of Illinois at Urbana – Champaign, USA, May 1999
Versailles Study Abroad Program – École Superiere d'Architecture de Varsailles 1997-1998

PROFESSIONAL EXPERIENCE

Skidmore, Owings & Merrill LLP. New York, USA (07/2008- present)
Senior Associate Principal
Key Projects:
Bangalore International Airport – Bangalore, India
One Manhattan West and Two Manhattan West – New York, NY, USA
Emory Winship Cancer Hospital – Atlanta, GA, USA
Massachusetts Institute of Technology: Schwarzman Collage of Computing – Cambridge, MA, USA
Pertamina Energy Tower – Jakarta, Indonesia
Busan Lotte World Tower – Busan, Korea
Shum Tip Upper Hills Tower 1 – Shenzhen, China
King Abdulah Financial District Conference Center – Riyadh, Saudi Arabia
The Avenues - Riyadh, Saudi Arabia
Kuwait University Stadium and Tennis Center - Kuwait.
National Museum for the US Army – Virginia, US.
Responsibilities: Project Management, Geometry optimization and advanced form finding. Structural design in steel, concrete, and glass. Presentation drawings, DD, Bid documents, and CDs.

Laguarda.Low Architects. Dallas, USA (10/2004-07/2007)
Project Architect
Retail Projects: Planeta Center - Krasnoyarsk Russia, Obolon Center – Kiev Ukraine, Obretovica Center – Niš Serbia
Mixed Use Projects: Grand Galleria – Burgas Bulgaria, Dostyk Center – Almaty Kazakhstan, Avenue Mall – Zagreb Croatia
Responsibilities: Master planning, Architectural design, Project Management.

Skidmore, Owings & Merrill LLP. Chicago, USA (03/2001-06/2001, 04/2004-10/2004)
Structural Engineer
Specialty Glass and Steel Projects: Jubilee Park Pavilion – London UK, Millennium Park Bridge – Chicago IL USA, Rachofsky Residence – Dallas TX USA, Audobon Insectarium – New Orleans LA USA.
High rise Projects: Chemsunny Plaza – Beijing China, Freedom Tower – New York NY USA, Moscow Tower – Moscow Russia.
Responsibilities: Structural design in steel, concrete, and glass using American, British, and Chinese codes. Presentation drawings, DD, Bid documents, and CDs.

Fitch-Fitzgerald, Inc. Architects, Engineers Champaign, USA (05/1999-01/2001)
Architectural Intern
Projects: Midrise Residential, Single Family, Educational
Critically involved in development of a new design process for the firm.
Responsibilities: Preliminary Design, Presentation Drawings, Structural Design, Construction Documents, Site Visits, Web Page Management, Meetings with clients, product representatives, and contractors.

TEACHING EXPERIENCE

Massachusetts Institute of Technology Cambridge, MA, USA
Adjunct Professor
spring, 2022 – 1.563 "Structural Design Project II – Tall Building Design"

New York University New York, NY, USA
Adjunct Professor
spring, 2022 - CE-GY 6263 "Analysis and Design of Tall Buildings"
spring, 2021 - CE-GY 6263 "Analysis and Design of Tall Buildings"
spring, 2020 - CE-GY 6263 "Analysis and Design of Tall Buildings"
spring, 2019 - CE-GY 6263 "Analysis and Design of Tall Buildings"
spring, 2018 - CE-GY 6263 "Analysis and Design of Tall Buildings"
spring, 2017 - CE-GY 6033 "Selected Topics in Structural Engineering - Tall Buildings"
spring, 2016 - CE-GY 6033 "Selected Topics in Structural Engineering - Tall Buildings"

Pratt Institute School of Architecture New York, NY, USA
spring, 2015 "Space Studio: Health Stations in Low Earth Orbit" advanced design studio
guest reviewer (for Michael Morris)

University of Pensylvania Philadelphia, PA, USA
spring, 2014 "Arch 602: Integrative Design Studio" advanced design studio
co-critic (with Justin Korhammer)

Columbia University New York, NY, USA
spring, 2014 "Space Studio VIII: Lunar Health Stations" advanced design studio
co-critic (with Michael Morris/Kelsey Lents/Christina Ciardullo)
spring, 2013 "Space Studio VII:" advanced design studio
co-critic (with Michael Morris)
spring, 2012 "Space Studio VI" advanced design studio
co-critic (with Yoshiko Sato/ Michael Morris/Craig Konyk)
spring, 2011 "Space Studio V" advanced design studio
co-critic (with Yoshiko Sato):
spring, 2010 "Space Studio IV: Lunar Hab Module" advanced design studio
co-critic (with Yoshiko Sato):
spring, 2009 "Space Studio lII: Space Hotel LEO" advanced design studio
co-critic (with Yoshiko Sato):

Yale University, New Haven, CT, USA
spring, 2009 School of Architecture
guest reviewer(for William Sharples): "Spaceport Master Planning" advanced design studio

Massachusetts Institute of Technology Cambridge, MA, USA
Department of Architecture (09/01-12/03)
Teaching Assistant:
4.401 Introduction to Building Technology – Fall 2001
4.440 Basic Structural Theory – Spring 2003
4.463 Structures II – Fall 2003

University of Illinois at Urbana - Champaign
Dept. of Civil Engineering
Grader for CEE 361 Methods of Structural Analysis – Fall 2000

NetMath - Distance Education Program (10/1995 - 05/1999)
Dept. of Mathematics, University of Illinois at Urbana - Champaign
Mentor for Calculus I, II and III.

INVITED LECTURES

2021.November.03 MIT Media Lab Webinar Series . *Design Exploration: Towards a Moon Architecture*. "Visions and Advanced Concepts"

2021.October.20 Institut Fur Architectur - Technical University Wien. *Emerging Fields in Architecture Lecture Series*. "Moon Village"
https://www.youtube.com/watch?v=tFIZWz9_fKo

2021.May.05 Massachusetts Institute of Technology. *Course MAS.S60 Operating in the Lunar Environment*. "SOM:Moon Village"

2021.April.16 Massachusetts Institute of Technology. *Special Structural Engineering Seminar Series* "New Challenges in Tall Building Structural Design"

2020.December.03 *Glass Supper 2020* by Intelligent Glass Solutions "Fly me to the Moon Village"
https://intelligent-publications.guestmanagement.solutions/

2020.October.20 Institut Fur Architectur - Technical University Wien. *Emerging Fields in Architecture Lecture Series*. "Newest development in tall building design."
https://www.youtube.com/watch?v=cfMi0yD9TMM&t=3257s

2020.October.16 Politecnico di Milano. "SOM:Moon Village"

2020.May.08 SOM Senior Tech Talks "Structural Systems for Tall Buildings – A Story of SOM Innovation"

2020.February.27 Johns Hopkins Whiting School of Engineering Graduate Seminar, Baltimore, MD, USA "Architecture in the Age of a New Frontier"

2019.November.16 ETEM Façade Conference, Sofia Bulgaria "Architecture + Structures: An Integrated Approach"

2018.May.04 Massachusetts Institute of Technology. *Special Structural Engineering Seminar Series* "Optimal Design: A Toolkit for the Success of Super Tall Towers"

2017.April.07 Columbia University Construction Administration Program Speaker Series "Optimal Design: A Toolkit for the Success of Super Tall Towers"

2015.November.19 CTBUH panel discussion "Collaboration – Computational Design In The Built Environment"

2014.March.24 AIA NY panel discussion Considering the Quake - "Earthquakes: How Well Are We Prepared?"

2013.February.21 Design [realized] - "KAFD Conference Center: An Integrated Design/Analysis Approach" –

2012.October.16 – Structural Engineers Association of New York monthly lecture. Part of Archtober.
"Structure + Architecture, An Integrated Design & Analysis Approach"

2005.Aug.15 - SOM Professional Development Committee Lecture Series

BOOKS

"The Mars Homestead for an Early Mars Scientific Settlement" with Bruce Mackenzie, Bart Leahy and Anthony Blair. Chapter 14 in A One Way Mission to Mars: Colonizing the Red Planet. Edited by Paul Davies and Dirk Schultze-Makuch. Cosmology Science Publishers 2010.

"Spaceport Design" with Constance Adams. Chapter 29 in Out of This World: The New Field of Space Architecture. Edited by A. Scott Howe and Brant Sherwood. AIAA 2009

PUBLICATIONS - FIRST AUTHOR

Petrov, Georgi I., Daniel Inocente, Max Haney, Neil Katz, Colin Koop, Advenit Makaya, Marlies Arnhof, Hanna Lakk , Aidan Cowley, Claudie Haignere, Piero Messina, Valentina Sumini, Jeffrey A. Hoffman, "Moon Village Reference Masterplan and Habitat Design" ICES 2019-280, Proceedings of the 49th International Conference on Environmental Systems (ICES), Boston, MA, 07-14 July 2019.

Petrov, Georgi I., Preetam Biswas, Ronald B. Johnson, Aurelie Seblani, and Charles Besjak. "Supertall Over the Train Tracks–One Manhattan West Tower." Structural Engineering International 29, no. 1 (2019): 116-122.

Petrov, **Georgi I.** Kat S. Park, Constance Adams, "Optimization of Inflatable Spacecraft Interior Volume Using Constraints Driven Design" AIAA 2010-6070, *Proceedings of the 40th International Conference on Environmental Systems (ICES)*, Barcelona, Spain, 11-15 July 2010.

Petrov, Georgi, C. Adams, K. Steinfeld, D. Jajich. "Constraints Driven Design of a Surface Inflatable Habitat Module" (SAE 2006-01-2101). *Proceedings of the 36th International Conference on Environmental Systems*, Norfolk, VA, USA, 17-20 July 2006.

Petrov, Georgi, and James Harris. "In-Situ Martian Construction – MDRS Crew 22 Masonry Construction Simulation" On to Mars 2: Exploring and Settling a New World. Edited by Frank Crossman and Robert Zubrin. Apogee Books 2005. pg. 126-131.

Petrov, Georgi, and John Ochsendorf. "Building on Mars." *Civil Engineering Magazine*, October 2005, pg 46-53.

Petrov, Georgi, Bruce Mackenzie, Mark Homnick, Joseph E Palaia. (2005 July). "A Permanent Settlement on Mars: The Architecture of the Mars Homestead Project" (SAE 2005-01-2853). *Proceedings of the 35th International Conference on Environmental Systems (ICES)*, Rome, Italy, 11-14 July 2005.

Petrov, Georgi I. (2004 February). A Permanent Settlement on Mars: The First Cut in the Land of a New Frontier. Master's thesis in architecture (M.Arch.), Cambridge, Massachusetts, USA: Massachusetts Institute of Technology.

PUBLICATIONS - CONTRIBUTING AUTHOR

Lévy, François; **Petrov, Georgi I.** (2021 July). Optimization of a Lunar Airlock (ICES-2021-021). 50th International Conference on Environmental Systems (ICES), virtual event, 12-14 July 2021.

Halbach, Eric; Inocente, Daniel; Katz, Neil; **Petrov, Georgi I.** (2021 July). Solar Arrays with Variable Panel Elevations for the Moon Village (ICES-2021-288). 50th International Conference on Environmental Systems (ICES), virtual event, 12-14 July 2021.

Mackenzie, Bruce A.; Leahy, Bart; **Petrov, Georgi I.**; Lutz, Kolemann; Feldman, Stuart (2021 July). Mars Manufacturing Settlement (ICES-2021-351). 50th International Conference on Environmental Systems (ICES), virtual event, 12-14 July 2021

Charles Besjak (PE, SE, FAIA, Director), Preetam Biswas (PE, Director), **Georgi I. Pet**rov (PE, AIA, Associate Director), Yunlu Shen (PE, SE, Associate Director), Bonghwan Kim (PE, AIA, Associate Director) & Alexandra Thewis (PE, Associate Director) (2021) "Three Supertall Slender Towers in Midtown Manhattan", Structural Engineering International, DOI: 10.1080/10168664.2021.1898297

Inocente, Daniel. Colin Koop, **Georgi I. Petrov**, Piero Messina, Isabelle Duvaux-Bechon, Advenit Makaya, David Binns, David Brandão and Robin Biesbroek. "Future Space Architecture: Cross-Functional Multidisciplinary Design and Engineering." In ASCEND 2020, p. 4067. 2020.

Inocente, D., Koop, C., **Petrov, G. I.,** Hoffman, J. A., Sumini, V., Makaya, A., Arnhof, M., Lakk, H., Lamaze, B., Cowley, A., Binns, D., Landgraf, M., Messina, P., and Haigneré, C., "Master Planning and Space Architecture for a Moon Village," 70th International Astronautical Congress (IAC), 2019.

Halbach, Eric, Daniel Inocente, Max Haney, and **Georgi I. Petrov**. "Solar Array Configurations for the Moon Village." In International Conference on Engineering Systems 2020. 2020.

Biswas, Preetam, **Georgi I. Petrov**, Yunlu Shen, Samuel Wilson and Charles Besjak. “Manhattan West Converting Site Challenges into Design Opportunities” Proceedings of IABSE Congress 2019. New York, New York, USA 4-6 September 2019.

Jordan, Alexander, Leathen Hanlon, **Georgi I. Petrov**, and Preetam Biswas. “Automated Integration: A New Frontier in BIM” Proceedings of IABSE Congress 2019. New York, New York, USA 4-6 September 2019.

Besjak, Charles, Gary Haney, Preetam Biswas, Jing Zhuang, and **Georgi I. Petrov**. "A Ladder At Its Core." Civil Engineering—ASCE 89, no. 10: 68.

Besjak, Charles, Gary Haney, Preetam Biswas, Jing Zhuang, and **Georgi I. Petrov**. "Shenzhen Shum-Yip: New Super Tall Systems through AE Collaboration." In AEI 2019: Integrated Building Solutions—The National Agenda, pp. 48-56. Reston, VA: American Society of Civil Engineers, 2019.

Lévy, François; **Georgi I Petrov**, Michael Fox, Marc Cohen, (2018 June). “A Framework for Spacecraft Information Modeling ”. 48th International Conference on Environmental Systems (ICES), 8-12 July, 2018, Albuquerque, NM, USA.

Charles Besjak, Preetam Biswas, **Georgi I. Petrov**, Matthew Streeter, and Austin Devin, "Effects of Perimeter to Core Connectivity on Tall Building Behavior”. IJHRB Research Journal. Vol. 6 Issue 1. March 2017.

Preetam Biswas, **Georgi Petrov,** Changjiang Zhou**,** “Optimal Design: An Enabling Toolkit for the Viability of Super Tall Towers”, *International Journal of Research in Engineering and Technology*, Volume: 05 Special Issue: 20, eISSN: 2319-1163 | pISSN: 2321-7308, DOI: 10.15623/ijret.2016.0532001 2016.

Preetam Biswas, Ronald Johnson, and **Georgi I. Petrov** “Detailing Connections – An Integrated Approach From Inception to Fabrication”, *AISC Connections* 2016.

Charles Besjak, Preetam Biswas, **Georgi I. Petrov**, Gavin Meinschein, Alexander Jordan, "New Heights in Sustainability—Pertamina Energy Tower", *Proceedings of ASCE Structures Congress 2015*, Portland, OR, 23-25 April 2015.

Lévy, François, **Georgi Petrov**, Constance Adams, " Colonize the Colony Ship" AIAA-2014-, AIAA Space 2014 Conference, 4–7 August 2014, San Diego, California, USA.

Charles Besjak, Preetam Biswas, **Georgi I. Petrov**, "Geometric Optimization of Kuwait University Stadium and Tennis Centre", *Proceedings of ACSE Structures Congress 2013*, Pittsburgh, PA, 2-4 May 2013.

Charles Besjak, Preetam Biswas, **Georgi I. Petrov**, Blake Altshuler, "King Abdullah Financial District Conference Center", *Proceedings of ACSE Structures Congress 2013*, Pittsburgh, PA, 2-4 May 2013.

Lévy, François, **Georgi Petrov**, Constance Adams, "Lunar Regolith Particles in Outposts" AIAA-2009-6585, *AIAA Space 2009 Conference*, 14-17 September 2009, Pasadena, California, USA.

Adams, Constance, **Georgi Petrov**, C. Ciardullo, F. Levy, A. Clinton, “Optimized Architecture for Passenger Spacecraft” AIAA-2008-7834, *AIAA Space 2008 Conference*, 09-11 September 2008.

Adams, Constance M., and **Georgi Petrov**. “Spaceport Master Planning: Principles and Precedents” AIAA-2006-7325, *2nd AIAA International Space Architecture Symposium*, San Jose, CA, USA, September 2006.

Mackenzie, Bruce, **Georgi Petrov**, Frank Crossman. “Mars Homestead: Conceptual Design of a Mars Base Constructed from Local Materials” AIAA-2006-7472, *AIAA Space2006 Conference*, San Jose, CA, USA 19-21 September 2006.

Adams, Constance M., and **Georgi Petrov**. “The Surface Endoskeletal Inflatable Module [SEIM].” *Proceedings of Earth and Space 2006 – 10th biannual ASCE conference on Engineering, Construction, and Operations in Challenging Environments*. League City/Houston, TX, USA, 5–8 March, 2006.

Adams, Constance, and **Georgi Petrov**. “Variants on the TransHab Paradigm: The Surface Endoskeletal Inflatable Module (SEIM)” (SAE 2005-01-2847). *Proceedings of the 35th International Conference on Environmental Systems*, Rome, Italy, 11-14 July 2005.