

INTRODUCING THE IPD COOKBOOK FOR EFFECTIVE PROJECT DELIVERY: A QUICK REFERENCE GUIDE TO PRINCIPLES, VALUES, AND INSTRUMENTS

Zorana Petojevic^{1,4}, Konrad Graser¹, Margarete Olender², Magdalena Mateescu³,
Andreas Urech³, Hartmut Schulze², Manfred Huber³

¹ZHAW School of Architecture, Design and Civil Engineering, ²FHNW, School of Architecture, Civil Engineering and Geomatics, ³FHNW, University of Applied Psychology, Switzerland, ⁴Faculty of Civil Engineering, University of Belgrade, Serbia

Abstract: The construction industry continues to face persistent challenges such as delays, cost overruns, and strained stakeholder relationships, prompting a shift towards more collaborative, value-driven, and sustainable delivery methods. This paper introduces the IPD Cookbook, a practical tool from a Swiss IPD research project designed to support the adoption of Integrated Project Delivery (IPD) in Switzerland. The Cookbook serves as a quick reference guide, offering a structured overview of key IPD values, principles, and instruments that foster collaborative, efficient, and value-driven project delivery. It links six foundational values to 13 operational principles and 36 practical instruments. The Cookbook also addresses critical soft factors such as trust, communication, and team culture. The development process follows a consensus-based Ontology Engineering Approach that supports a team to reach consensus through iterative evaluations and improvements. A multi-method process—combining literature reviews, expert workshops, surveys, and case study insights—ensured that the Cookbook offers practitioners a solid foundation for adopting IPD in Switzerland and beyond.

Keywords: Integrated Project Delivery (IPD), Collaborative Project Management, IPD Principles and Values, Implementation Instruments, Swiss Construction Industry

The construction industry, a major driver of economic growth, continues to face significant challenges, such as project delays, cost overruns, stakeholder conflicts, and growing demands for sustainability and digitalization (Shaping the Future of Construction A Breakthrough in Mindset and Technology, 2016). While traditional project delivery methods have historically prioritized cost and schedule control, today’s complex project environments require a shift toward maximizing value creation, enhancing collaboration, and embracing innovation to meet emerging sustainability demands and technological transformation (Kenig et al., 2010).

IPD offers a promising alternative to traditional delivery models by fostering early stakeholder involvement, shared decision-making, and aligned risks and rewards, promoting integration and

proactive value optimization throughout the project lifecycle (Integrated Project Delivery: A Guide, 2007), (Ashcraft, 2022). While IPD principles are fundamental to enabling collaboration and value creation, their specific form can vary depending on regional context, industry maturity, and organizational culture (Kenig et al., 2010), (Mosey et al., 2010), (Cheng et al., 2012). Tailoring IPD principles to the specific needs of a regional - in this case, the Swiss - construction sector is crucial to enhancing collaboration, integration, and the overall success of projects (*PMBOOK GUIDE*, 2021) (Velez, 2014).

In Switzerland, the construction industry is facing increasing pressure to deliver more collaborative, sustainable, and efficient projects. In 2024, the Swiss Society of Engineers and Architects (SIA) published **SIA 2065** (*Planen und Bauen in Projektallianzen*, 2024), formalizing IPD guidelines in Switzerland. Alongside this, initiatives like the [IPD Lab](#), [Werkallianz](#), and industry-driven efforts are promoting IPD through practical applications and pilot projects. Despite this progress, what remains lacking is a comprehensive and structured framework that systematically connects IPD values, principles, and implementation instruments. Existing efforts often focus on contract forms, process guidelines, or project-level strategies, but fail to consolidate these into an integrated, value-driven system. A unified, value-principle-instrument-based framework supports a clearer orientation for practitioners and facilitates consistent IPD adoption across diverse project contexts in Switzerland.

The IPD Cookbook serves as a quick reference guide, offering a structured overview of the essential values, principles, and instruments that collectively enable more collaborative, integrated, and value-driven project delivery. In addition to “hard building blocks” of IPD, addressing essential values, principles, and instruments, the Cookbook places a strong emphasis on “soft building blocks” including factors such as trust, open communication, and team cohesion, offering instruments specifically tailored to foster a supportive project culture. The research aimed to develop a practical resource to support researchers, practitioners, and decision-makers in adopting and operationalizing IPD approaches more effectively within the Swiss construction sector and potentially adapting to other contexts.

The development of the IPD Cookbook followed a structured and iterative methodology designed to ensure a practical and context-specific framework for the Swiss construction industry. The approach combined systematic background research, collaborative workshops, and expert-driven refinement, aligning with consensus-building techniques commonly used in ontology engineering (Karapiperis & Apostolou, 2006). The methodology is visualized in Figure 1.

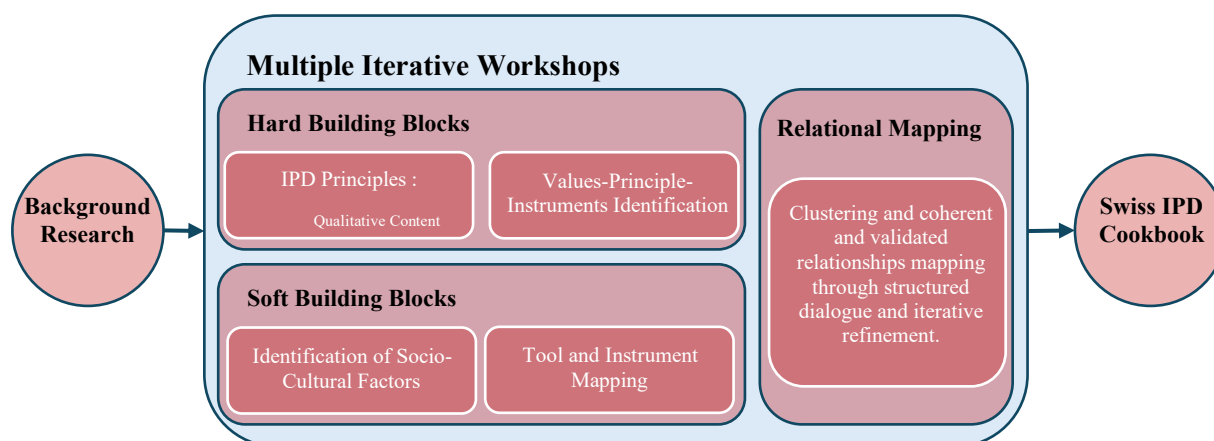


Figure 1 Methodology Steps

The process began with background research, focusing on an extensive review of international and national guidelines, frameworks, and scholarly contributions related to IPD and similar collaborative project delivery models. Eleven key sources were selected based on their relevance, influence, and practical application. These included foundational documents and recent adaptations currently in use, ensuring that all essential perspectives were covered (see **Error! Reference source not found.**).

Table 1 Swiss IPD Cookbook Sources

No.	Scholar	Year	Issued/Applied	No. of Principles
1.	PCP (Wright & Mosey, 2000)	2000	UK/Worldwide	10
2.	Alliancing (Brumby, 2006)	2006	Australia/Worldwide	9
3.	AIA (2007) (Integrated Project Delivery: A Guide, 2007)	2007	USA/Worldwide	9
4.	NASFA et.al. (Kenig et al., 2010)	2010	USA/Worldwide	15
5.	AIA (2014) (Integrated Project Delivery: An Updated Working Definition, 2014)	2014	USA/Worldwide	11
6.	DPR (Darrington & Lichtig, 2018)	2018	USA	8
7.	LCI (<i>Transforming Design and Construction: A Framework for Change</i> , 2015)	2019	USA/Worldwide	6
8.	PMI (<i>PMBOOK GUIDE</i> , 2021)	2021	USA/Worldwide	12
9.	IPA (Boldt et al., 2022)	2022	German-speaking regions	8
10.	WERKALLIANZ (Steiner, 2021)	2021	Switzerland	7
11.	SIA 2065	2024	Switzerland	7
TOTAL				102

Building on this foundation, the research progressed through multiple iterative workshops, addressing both hard and soft building blocks of IPD implementation. The hard building blocks focused on two key aspects. First, a comprehensive identification of IPD principles was conducted, and then through qualitative content analysis (Mayring, 2023), the principles were systematically deconstructed and coded into thematic categories to reveal overlaps, distinctions, and gaps. To prioritize relevance, an expert survey involving eight construction professionals with extensive construction management and varying IPD experience assessed the importance and current level of application of each principle in Swiss practice, providing valuable insights into which principles are considered essential. In parallel, values and instruments associated with the principles from the pooled literature were mapped. Simultaneously, the soft building blocks were addressed through the identification of socio-cultural factors influencing collaboration within projects. These discussions captured organizational, behavioral, and cultural dynamics critical for successful IPD adoption. Furthermore, instruments supporting trust-building, effective communication, and integrated team practices were identified, ensuring a holistic approach.

The final phase of the process was relational mapping, where the relationships between values, principles, and instruments, on both sides, hard and soft building blocks, were identified and refined into a coherent framework. This was facilitated through collaborative platforms like the MIRO board, enabling project participants to jointly structure, review, and validate these connections. The iterative discussions ensured that the final IPD Cookbook offers a logically structured and practically applicable resource, translating abstract values into actionable project delivery strategies.

An initial pool of 102 principles from 11 key guidelines was consolidated into 13 core principles, each linked to six values and 36 implementation instruments as “hard” building blocks. Additionally, six cultural factors and 34 supporting instruments were defined as “soft” building blocks to foster an effective project environment.

3.1. IPD HARD BUILDING BLOCKS

In the context of IPD, the concept of “hard building blocks” refers to the structured components that form the technical and organizational foundation for collaborative project execution. These blocks include values, principles, and instruments—each playing a distinct but interconnected role in operationalizing IPD. *Values* represent the overarching beliefs and priorities that guide behaviors and decisions across all stakeholders. They define the cultural mindset of the project team and act as guiding standards for collaborative engagement. *Principles* are derived from these values and serve as actionable rules or behaviors that shape project execution. They help translate abstract ideas like “trust” or “collaboration” into observable and repeatable practices. *Instruments* are the specific tools, procedures, methods, or strategies used to implement the principles. These can include structured meetings, contract models, performance tracking

systems, communication frameworks, and other tangible mechanisms that support the day-to-day application of IPD principles.

Together, these elements ensure that IPD is not just a theoretical model but a practical and adaptable system. This relational structure is illustrated in Figure 2.



Figure 2 Block Schema of Principles, Values, and Instruments

To ensure clarity and applicability, IPD values were defined in a comparative format (Beck et al., 2019):

"IPD Value **OVER** Business as Usual in Traditional Projects."

It is important to clarify that using "OVER" in the comparative formulation does not dismiss traditional project values, which remain relevant. Both value sets matter for project success, but IPD values take precedence as they more strongly influence collaboration, integration, and long-term project performance.

Figure 3 visualizes the framework, illustrating relationships between 6 core values (V1-V6), 13 principles (P1-P13), and 36 implementation instruments (I1-I36). For example, the principle *Culture of Trust* (P8) promotes a trust-based project culture and aligns with the values of *Commitment to Collaboration Over Prescriptive Contracts* (V3) and *Transparency Over Control* (V4) and is implemented through tools like *Co-location Work* (I19), *Solution-Oriented Conflict Resolution* (I22), *Leadership by Example* (I23) and *Open, Direct, and Honest Communication* (I24).

Zorana PETOJEVIĆ
Konrad GRASER
Margarete OLENDER
Magdalena MATEESCU
Andreas URECH
Hartmut SCHULZE
Manfred HUBER

29. Internacionalni kongres iz upravljanja projektima
“Snaga kolektivne inteligencije u profesionalnom upravljanju projektima”

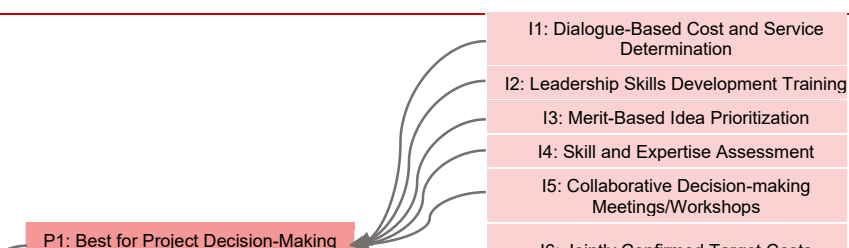


Figure 3 Principles with Values and Instruments

Table 2 summarizes principle definitions and source references, anchoring them in established best practices while adapting to the Swiss context.

Table 2 Principles Description and Origin

Principle	<i>Grounded in</i>
P1: Best for Project Decision-Making and Competencies Harnesses team strengths, balances leadership, and prioritizes project success, fostering collaboration, ownership, and effective outcomes.	(Brumby, 2006), (Boldt et al., 2022)
P2: Value-Based Rewards and Compensation Aligns incentives with contributions, promoting fairness, equity, and collective commitment to project goals.	(Integrated Project Delivery: A Guide, 2007), (Kenig et al., 2010), (Integrated Project Delivery: An Updated Working Definition, 2014), (Boldt et al., 2022)
P3: Collective Ownership of Opportunities and Risks Shares challenges and rewards, enhancing collaboration, accountability, and unified problem-solving.	(Brumby, 2006), (Boldt et al., 2022), (Steiner, 2021), (Fischer et al., 2014), (<i>Planen und Bauen in Projektallianzen</i> , 2024)
P4: Collaborative Decision-Making and Consensus Promotes inclusive, goal-aligned decisions, building trust, improving quality, and fostering ownership.	(Brumby, 2006), (Integrated Project Delivery: A Guide, 2007), (Kenig et al., 2010), (Integrated Project Delivery: An Updated Working Definition, 2014), (Boldt et al., 2022), (<i>Planen und Bauen in Projektallianzen</i> , 2024)
P5: Early Stakeholder Involvement in Design Engages stakeholders early to align design with user needs, improving efficiency and reducing risks.	(Integrated Project Delivery: A Guide, 2007), (Kenig et al., 2010), (Integrated Project Delivery: An Updated Working Definition, 2014), (Boldt et al., 2022), (Fischer et al., 2014)
P6: Supportive Environment for Project Partners Addresses stakeholder needs to build trust, respect, and effective cooperation toward shared goals.	(Brumby, 2006), (Boldt et al., 2022)
P7: Culture of Collaboration and Teamwork Encourages seamless cooperation, knowledge sharing, and prioritization of collective success.	(Integrated Project Delivery: A Guide, 2007), (Kenig et al., 2010), (Integrated Project Delivery: An Updated Working Definition, 2014), (Boldt et al., 2022)
P8: Culture of Trust Fosters open communication, reduces conflicts, and strengthens adaptive, collaborative responses.	(Brumby, 2006), (Integrated Project Delivery: A Guide, 2007), (Kenig et al., 2010), (Integrated Project Delivery: An Updated Working Definition, 2014), (Boldt et al., 2022)
P9: Transparent Data and Real-Time Information Ensures informed decisions, improves efficiency, and strengthens accountability through shared data.	(Brumby, 2006), (Boldt et al., 2022), (Steiner, 2021), (<i>Planen und Bauen in Projektallianzen</i> , 2024)
P10: Balanced Approach to Error Management Encourages learning from errors, reduces fear of failure, and supports continuous team improvement.	(Brumby, 2006), (Boldt et al., 2022)

P11: Interdisciplinary Collaboration for Sustainable Solutions (Steiner, 2021)

Integrates diverse expertise through iterative collaboration to achieve innovative, sustainable outcomes.

P12: Unified Collective for Superior Results

Leverages collective synergy to surpass individual efforts and drive superior project outcomes.

(Brumby, 2006), (Integrated Project Delivery: A Guide, 2007), (Kenig et al., 2010), (Integrated Project Delivery: An Updated Working Definition, 2014)

P13: Inclusive and Merit-Based Decision-Making

Ensures decisions reflect collective goals, fostering inclusivity, consensus, and team cohesion.

(Brumby, 2006), (Steiner, 2021), (Fischer et al., 2014)

3.2. IPD SOFT BUILDING BLOCKS

While hard building blocks form the technical foundation of IPD, its true success relies just as much on the human side of collaboration—the soft factors. These encompass interpersonal behaviors, communication dynamics, cultural norms, and shared values that foster trust, accountability, and cooperation throughout the project lifecycle. All factors and assigned implementation tools are presented in Figure 4 and characterised in the following.

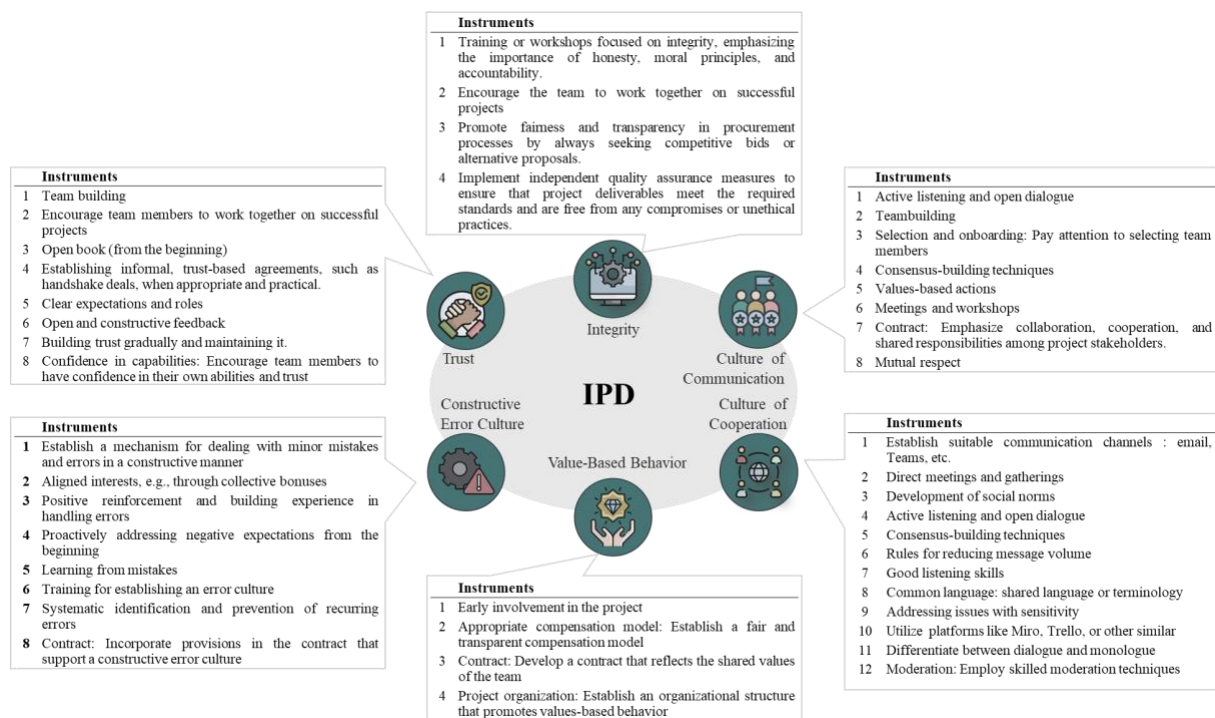


Figure 4 Soft Factors and Implementation Tools

Culture of Cooperation

Cooperation is built on mutual support, willingness to help, and striving for win-win outcomes. It involves complementing each other's strengths, proactively solving problems, and promoting shared ownership. Key instruments include team-building exercises, consensus-building methods, value-based actions, and collaborative contract provisions.

Culture of Communication

Effective communication ensures clarity, reduces misunderstandings, and strengthens alignment. It includes direct dialogue, the use of digital platforms, shared terminology, and skilled moderation. Open and respectful exchanges are encouraged over email-heavy, indirect communication patterns.

Value-Based Behavior

Acting according to shared project values such as fairness, integrity, and collective interest promotes long-term alignment and decision-making. This includes early stakeholder involvement, transparent compensation models, and contractual frameworks that reinforce team values.

Constructive Error Culture

Encouraging openness about mistakes without blame fosters a learning environment. A constructive error culture supports risk-taking and continuous improvement. Practices include open feedback loops, proactive prevention, positive reinforcement, and training in error-handling approaches.

Trust

Trust enables efficient decision-making and reduces the need for excessive formalities. It is cultivated through transparency, reliability, shared successes, and informal agreements. Regular feedback, clear roles, and confidence in team capabilities are critical to building and maintaining trust.

Integrity

Integrity is about consistency, accountability, and moral clarity. It includes standing by one's word, taking responsibility, and being fair in procurement and quality assurance. Workshops, team norms, and external audits support the embedding of integrity in project culture. Together, these soft factors form the cultural infrastructure of IPD, turning collaborative intent into practical, sustainable project behaviors.

The IPD Cookbook provides a practical framework for implementing IPD in the Swiss construction industry, translating abstract principles into actionable instruments aligned with core project values and thus equips project teams with the tools needed to foster genuine collaboration, shared accountability, and value-based decision-making. Developed through literature review, expert input, and iterative workshops, it defines 13 core principles, 36

implementation instruments, and six essential core values. Additionally, it highlighted the crucial role of human and cultural dimensions by identifying six soft factors essential to a successful IPD environment, each backed by targeted tools and practices. The dual structure of hard and soft building blocks ensures that both the procedural and interpersonal aspects of project delivery are addressed, serving as a catalyst for long-term cultural change within project teams and organizations. Future validation in real projects and continuous refinement through stakeholder feedback will further enhance its relevance and contribute to a more resilient construction sector.

Acknowledgement

This research was supported by Innosuisse (Grant No. 100.691 IP-SBM - *Swiss IPD – A Practical Framework for Integrated Project Delivery in Switzerland*)

REFERENCES

- A Guide to the Project Management Body of knowledge AND The Standard for Project Management*. (2021). Project Management Institute.
- Ashcraft, H. (2022). Transforming project delivery: Integrated project delivery. *Oxford Review of Economic Policy*, 38(2), 369–384. <https://doi.org/10.1093/oxrep/grac001>
- Beck, K., Beedle, M., Bennekum, A., Cockburn, A., Cunningham, W., Fowler, M., Martin, R. C., Mellor, S., Thomas, D., Grenning, J., Highsmith, J., Hunt, A., Jeffries, R., Kern, J., Marick, B., Schwaber, K., & Sutherland, J. (2019). *Agile Manifesto*. Agile Alliance.
- Boldt, A., Breyer, W., Dauner-Lieb, B., Haghsheno, S., Lentzler, M., Leupertz, S., & Schwerdtner, P. (2022). *Integrierte Projektabwicklung (IPA) Charakteristika und konstitutive Modellbestandteile*. IPA-Zentrum – Das Kompetenzzentrum für Integrierte Projektabwicklung.
- Brumby, J. (2006). *Project Alliancing Practitioners' Guide*. Department of Treasury and Finance, State of Victoria 2006.
- Cheng, R., Dale, K., Aspenson, A., Salmela, K., Martin, C. S., & Kim, H.-Y. (2012). *IPD Case Studies*. AIA Minnesota, School of Architecture University of Minnesota.
- Darrington, J., & Lichtig, W. (2018). *Integrated Project Delivery Aligning Project Organization, Operating System and Commercial Terms*. DPR Construction.
- Fischer, M., Reed, D., Khanzode, A., & Ashcraft, H. (2014). A Simple Framework for Integrated Project Delivery. *Proceedings IGLC-22*.
- Integrated Project Delivery: A Guide* (version 1). (2007). The American Institute of Architects, California Council. https://www.aia.org/sites/default/files/2023-11/ipd_guide.pdf
- Integrated Project Delivery: An Updated Working Definition* (Version 3). (2014). The American Institute of Architects, California Council.
- Karapiperis, S., & Apostolou, D. (2006). Consensus Building in Collaborative Ontology Engineering Processes. *Journal of Universal Knowledge Management*, 1, Nr. 3.

-
- Kenig, M., Allison, M., Black, B., Burdi, L., Colella, C., Davis, H., Elsperman, D., Frey, J., Katherman, R., Lambert, M., Lynch, J., Maibach, D., & McKimmey, M. (2010). *Integrated Project Delivery; For Public and Private Owners*. National Association of State Facilities Administrators (NASFA); Construction Owners Association of America (COAA); APPA: The Association of Higher Education Facilities Officers; Associated General Contractors of America (AGC); and American Institute of Architects (AIA).
- Mayring, P. A. E. (2023). Qualitative Content Analysis. In *International Encyclopedia of Education(Fourth Edition)* (S. 314–322). Elsevier. <https://doi.org/10.1016/B978-0-12-818630-5.11031-0>
- Mosey, D., Vickery, A., & Morrish, C. (2010). *10 Years of Partnering Contracts PPC2000/TPC2005*. The Association of Consultant Architects Ltd (ACA).
- Planen und Bauen in Projektallianzen* (SNR 592065:2024 de). (2024).
- Shaping the Future of Construction A Breakthrough in Mindset and Technology*. (2016). World Economic Forum.
- Steiner, B. (2021). WERKALLIANZ: Arbeitspapier. *BERNSTEIN BÂTIR AG SIA USIC*.
- Transforming Design and Construction: A Framework for Change*. (2015). Lean Construction Institute (LCI).
- Velez, H. (2014). *Determining The Effects of Facilitated Collaboration on Construction Team Performance and Project Outcomes*. The Pennsylvania State University.
- Wright, J., & Mosey, D. (2000). *PPC2000 The Aca Standard Form of Contract for Project Partnering*. The Association of Consultant Architects Ltd and Trowers & Hamlins.