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Tezel, Algan, Koskela, Lauri, Tzortzopoulos, Patricia, Formoso, Carlos and Alves, Thais

Visual Management in Brazilian Construction Companies: Taxonomy and Guidelines for Implementation

### Original Citation

Tezel, Algan, Koskela, Lauri, Tzortzopoulos, Patricia, Formoso, Carlos and Alves, Thais (2015) Visual Management in Brazilian Construction Companies: Taxonomy and Guidelines for Implementation. *Journal of Management in Engineering*, 31 (6). ISSN 0742-597X

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Table 4 – Adoption of VM taxonomy elements by different companies

Case study No	Removing Visual Barriers	Standardization	The 5S program	Production Control	Production Levelling	In-Station Quality	Prototyping and Sampling	Visual Signs	Work Facilitators	Improvisational VM	Performance Management through Visual Management	Distributing System Wide Information through VM	Mistake Proofing Systems	On-Site Prefabrication
1	- Site layout organization - Using chain-link fences	- Marked pathways - Color coded helmets, material & workstations - ID cards & name tags - Material grouping - Site stock area IDs - Site maps - Area responsible personnel photos/contact	5S exists	Visual control in cement bags and bricks				- Company policies visually presented	Visual work instructions	On-site construction quality control and assurance	- Productivity metrics - Quality metrics - Safety metrics	Visual information on the project environment for the workforce		- Electrical fixtures fitted on bricks before bricklaying
2	- Site layout organization - Using chain-link fences	- Color coded helmets, material & workstations - ID cards & name tags - Material grouping - Site stock area IDs - Location IDs, - Site maps	5S exists	Visual control in cement bags and bricks			Prototypes of certain piping systems	- Slogans - Warnings - Visual ID of safety equipment on site	- Process charts - Color coded work aids - Visual work instructions	On-site construction quality control and assurance	- Color coded worker group and project performance boards	Visual information on the project environment for the workforce	Simple mistake proofing device for pipe fitting	- Electrical fixtures fitted on bricks before bricklaying
3	- Site layout organization - Using chain-link fences	- Marked pathways - Color coded helmets, material & workstation - ID cards & name tags - Material grouping - Site stock area IDs - Location IDs - Site maps						- Safety signs - Company policies - Slogans		On-site construction quality control and assurance	- Supplier performance boards - Overall construction progress boards - Quality metrics - Safety metrics			
4	- Site layout organization - Using chain-link fences - Using glass where appropriate	- Marked pathways - Color coded helmets, material, tools & workstation - ID cards & name tags - Material grouping - Site stock area IDs - Location IDs - Site maps - Area responsible personnel photos/contact		- Card based (kanban) production control system for brick, cement, & electrical fixtures - A simple material tag based steel control system		Preparations for an andon system		- Safety signs - Company policies - Slogans - Best practices	- Process charts - Color coded work aids - Visual work instructions - Color coded project drawings – Various visual aids	On-site construction quality control and assurance	- Productivity metrics - Safety metrics - Financial metrics	Calendar summarizing important project events in the near future		
5	- Site layout organization - Using chain-link fences	- Marked pathways - Color coded helmets, material, tools & workstation - ID cards & name tags - Material grouping - Site stock area IDs - Location IDs - Site maps			Concrete production Levelling by using simple, colored beads		Prototypes of certain piping systems	- Safety information - Desired practices reminders by using the company mascot	- Process charts - Visual work instructions - Color coded magnetic board summarizing the important dates of the project planning	On-site construction quality control and assurance				

6	<ul style="list-style-type: none"> <li>- Site layout organization</li> <li>- Using chain-link fences</li> <li>- Using glass where appropriate</li> </ul>	<ul style="list-style-type: none"> <li>- Marked pathways</li> <li>- Color coded helmets, material, tools &amp; workstation</li> <li>- ID cards &amp; name tags</li> <li>- Material grouping</li> <li>- Site stock area IDs</li> <li>- Location IDs</li> <li>- Site maps</li> <li>- Area responsible personnel photos/contact</li> </ul>	5S exist s	<ul style="list-style-type: none"> <li>- Hand tools control boards</li> <li>- Card based (kanban) production control system for various materials</li> </ul>	A heijunka board for on-site concrete production	Andon board system	<ul style="list-style-type: none"> <li>- Sampling for safety gears, personnel &amp; material location matching</li> <li>- Prototypes of certain piping systems</li> </ul>	<ul style="list-style-type: none"> <li>Safety signs, worker emotions' boards, slogans, best practice, information on the production system</li> </ul>	<ul style="list-style-type: none"> <li>- Process charts</li> <li>- Visual work instructions</li> <li>- Color coded magnetic project drawings</li> <li>- Various visual aids</li> </ul>	On-site construction quality control and assurance	<ul style="list-style-type: none"> <li>- Productivity metrics</li> <li>- Safety metrics</li> <li>- Quality metrics</li> <li>- Financial metrics</li> <li>- Visual workers' mood board</li> </ul>	Visual information on the project environment for the workforce		<ul style="list-style-type: none"> <li>- Electrical fixtures are fitted on bricks before bricklaying</li> <li>- Electrical and mechanical (piping, fixtures) prefabrication with visual information</li> </ul>
7	<ul style="list-style-type: none"> <li>- Site layout organization</li> <li>- Using chain-link fences</li> <li>- Using glass where appropriate</li> </ul>	<ul style="list-style-type: none"> <li>- Marked pathways</li> <li>- Color coded helmets, material, tools &amp; workstation</li> <li>- ID cards &amp; name tags</li> <li>- Material grouping</li> <li>- Site stock area IDs</li> <li>- Location IDs</li> <li>- Site maps</li> <li>- Area responsible personnel photos/contact</li> </ul>	5S exist s	<ul style="list-style-type: none"> <li>- Hand tools control boards</li> <li>- Scaffolding control</li> <li>- Card based (kanban) production control system for various materials</li> </ul>	A heijunka board for on-site concrete production	Andon board system	<ul style="list-style-type: none"> <li>- Sampling for safety gears, personnel &amp; material location matching</li> <li>- Prototypes of certain piping systems</li> </ul>	<ul style="list-style-type: none"> <li>Safety information, slogans, desired practices, reminders by using the company mascot</li> </ul>	<ul style="list-style-type: none"> <li>- Process charts</li> <li>- Visual work instructions</li> <li>- Color coded magnetic project drawings</li> <li>- Various visual aids</li> </ul>	On-site construction quality control and assurance	<ul style="list-style-type: none"> <li>- Productivity metrics</li> <li>- Safety metrics</li> <li>- Quality metrics</li> <li>- Financial metrics</li> </ul>	Visual information on the project environment for the workforce	Simple mistake proofing for the installation of sinks	<ul style="list-style-type: none"> <li>- Electrical fixtures are fitted on bricks before bricklaying</li> <li>- Electrical and mechanical (piping, fixtures) prefabrication with visual information</li> </ul>
8	<ul style="list-style-type: none"> <li>- Site layout organization</li> <li>- Using chain-link fences</li> <li>- Using glass where appropriate</li> </ul>	<ul style="list-style-type: none"> <li>- Marked pathways</li> <li>- Color coded helmets, material, tools &amp; workstation</li> <li>- ID cards &amp; name tags</li> <li>- Material grouping</li> <li>- Site stock area IDs</li> <li>- Location IDs</li> <li>- Site maps</li> <li>- Area responsible personnel photos/contact</li> </ul>	5S exist s	<ul style="list-style-type: none"> <li>- Hand tools control boards</li> <li>- Card based (kanban) production control system for various materials</li> </ul>	A heijunka board for on-site concrete production	Andon board system	<ul style="list-style-type: none"> <li>- Sampling for safety gears, personnel &amp; material location matching</li> <li>- Prototypes of certain piping systems</li> </ul>	<ul style="list-style-type: none"> <li>Safety information, slogans, desired practices, reminders.</li> </ul>	<ul style="list-style-type: none"> <li>- Process charts</li> <li>- Visual work instructions</li> <li>- Color coded magnetic project drawings</li> <li>- Various visual aids</li> </ul>	On-site construction quality control and assurance	<ul style="list-style-type: none"> <li>- Productivity metrics</li> <li>- Safety metrics</li> <li>- Quality metrics</li> <li>- Financial metrics</li> <li>- Visual supplier performance boards</li> <li>- Visual workers' mood board</li> </ul>	Visual information on the project environment for the workforce		<ul style="list-style-type: none"> <li>- Electrical fixtures are fitted on bricks before bricklaying</li> <li>- Electrical and mechanical (piping, fixtures) prefabrication with visual information</li> </ul>
9	<ul style="list-style-type: none"> <li>- Site layout organization</li> <li>- Using chain-link fences</li> </ul>	<ul style="list-style-type: none"> <li>- Marked pathways</li> <li>- Color coded helmets, material, tools &amp; workstation</li> <li>- ID cards &amp; name tags</li> <li>- Material grouping</li> <li>- Site stock area IDs</li> <li>- Location IDs</li> </ul>				A simple in station quality system by using colored cards		<ul style="list-style-type: none"> <li>- Safety information</li> <li>- Slogans</li> <li>- Desired practices</li> <li>- Reminders</li> </ul>	<ul style="list-style-type: none"> <li>- Visual work instructions</li> </ul>	On-site construction quality control and assurance	<ul style="list-style-type: none"> <li>- Productivity metrics</li> <li>- Safety metrics</li> <li>- Quality metrics</li> </ul>			